WEB SEARCHING BEHAVIOUR AMONG THE RESEARCH SCHOLARS AND PG STUDENTS IN THE DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE, AMU, ALIGARH

DISSERTATION

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SANIA ARIF

Roll No. 11-LSM-03

Enrollment No. GB-6681

Under the Supervision of

DR. SUDHARMA HARIDASAN

(Associate Professor)

DEPARTMENT OF LIBRARY & INFORMATION SCIENCE

ALIGARH MUSLIM UNIVERSITY,

ALIGARH (INDIA)

2012

DEPARTMENT OF LIBRARY & INFORMATION SCIENCE
ALIGARH MUSLIM UNIVERSITY, ALIGARH-

Phone Off.: 0571-2700039
Mob.: +91 9412272298
Int.: 3821

Dr. Sudharma Haridasan
Associate Professor

Ref. No.....
Dated 15.10.12

Certificate

This is to certify that **Ms. Sania Arif** has completed her dissertation entitled **"Web Searching Behaviour among the Research Scholar and PG students in the Department of Library and Information Science, AMU, Aligarh: A Survey"** in partial fulfillment of the reqrements for the degree of Master of Library and Information Science 2011-2012. She has conducted the work under my supervision and guidance.

I deem it fit for submission.

Sudharma

(Dr. Sudharma Haridasan)
Associate Professor

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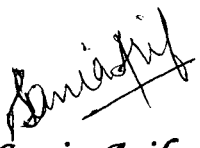

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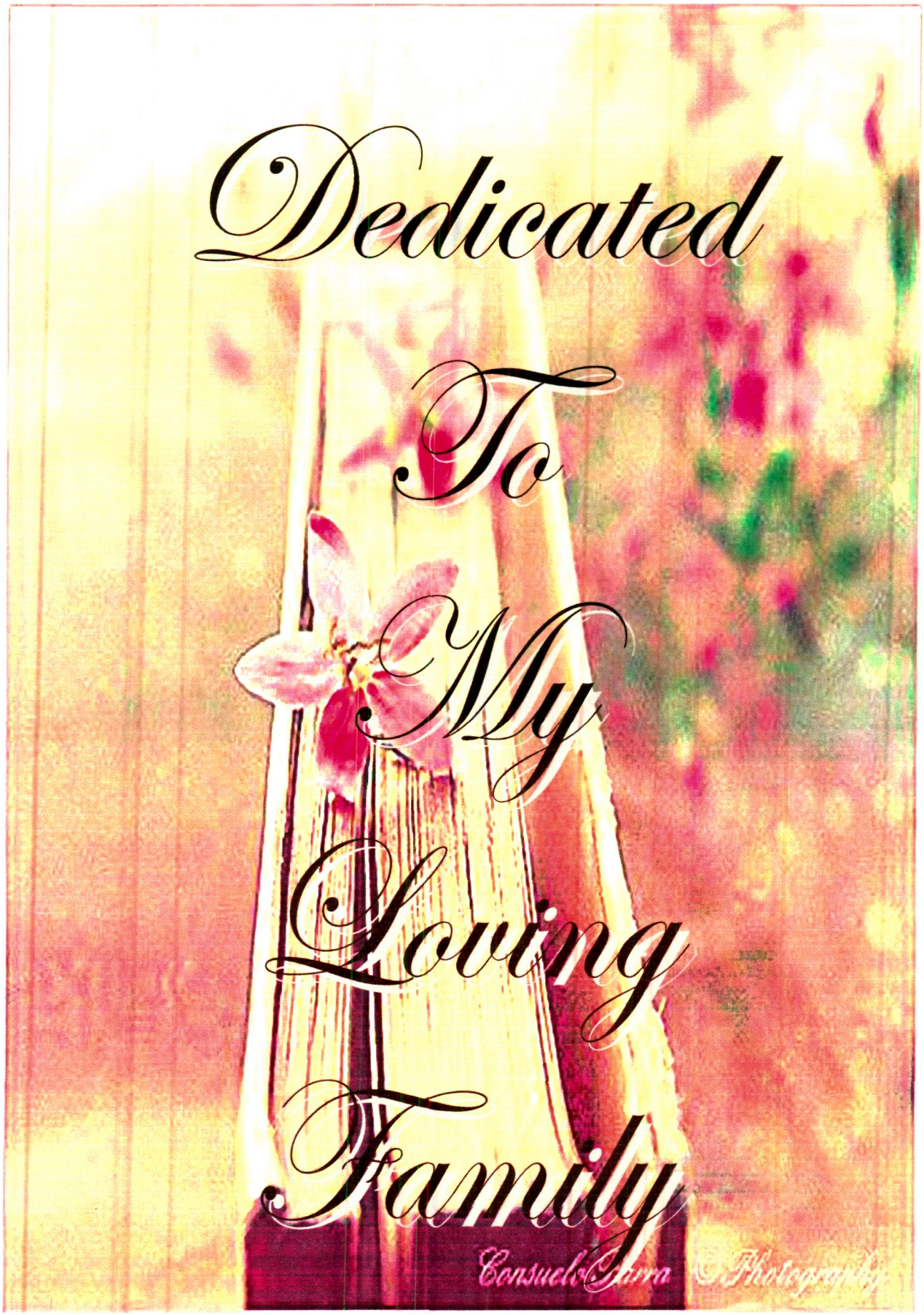
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To
My
Loving
Family
Consuelo Farm Photography

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Chapter-1

Introduction

CHAPTER-1

INTRODUCTION

1. WORLD WIDE WEB (WWW)

The World Wide Web (abbreviated as WWW or W3, commonly known as the Web), is a system of interlinked hypertext documents accessed via the Internet. With a web browser, one can view web pages that may contain text, images, videos, multimedia, and navigate between them via hyperlinks. It is one of the several internet resource discovery tools developed to help people publish, organize and provide access to information on the internet.www can be thought of as a very large subset of the internet consisting of hypertext and hypermedia document. Either type of documents enables you to move effortlessly from one to another. Each WWW screen provides links to other remote serves of information through pointing top other sites and information.

Characteristics of www the rapid escalation of web use seems to be the result of at least three characteristics.

- The web is an enabling technology.
- The web is a unifying technology.
- The web is a social phenomenon.

Features of WWW The major features of the web are

- It is a hypertext system.
- It is a multimedia system.
- It is a distributed system.
- It incorporates other internet tools, such as FTP, Gopher and WAIS.
- It provides an interface to other database system.

Applications of web A partial list of popular web application includes the following

- Individuals and organizational home pages.
- Sales prospecting via interactive forms based surveys.
- Advertising and distribution of product promotional material.
- New product information, product updates, products recall notices and,
- Digital café.

2. WEB SEARCHING

Interactive searches became possible in the 1980's with the advent of faster databases and smart terminals. In contrast, computerized batch search. A general introduction to online information retrieval is followed by descriptions of the origin and scope of online services and databases, and of the hardware required. Search procedures, database structures, search facilities, search preparation and strategies. Alternative ways of carrying out searches, management of online searching, and staff training are considered.

Online search is the process of interactively searching for and retrieving requested information via a computer from databases that are online search was prevalent in the 1960's and 1970's. Today, searches through web search engines constitute the majority of online searches.

Web searching is becoming an indispensable part of the daily life of the people. Web usage is not limited a few to specific purposes and its applications are spreading across different aspects of life. Among all web based applications, web searching is one of the most common and important one. However, satisfying the information needs on the web are it is not always an easy and straightforward process.

2.1 Web Searching Procedure

Search procedure on the Web is a complex course of action and relatively or sometimes entirely different to search procedures in previous online environments. The search process does not begin by typing a search

term or a well-defined or unstructured query into search engines and does not come to an end by retrieval of a few relevant documents or avalanche of irrelevant retrieved items.

In addition, the search process for the majority of people does not usually happen just once and then finish particularly for those who are gathering information about a specific topic in a comprehensive approach. Generally, they have to delve into the Web frequently over a period of time. Sometimes it can be a time consuming and possibly frustrating task. Although you may find almost everything on the Web, searching the Web does not go well always and is not all the time successful. There is a potential ability for the Web to answer a given question. However, this is possible that a search process would not be successful. When it happens we can look at this topic from different perspectives. In fact, when somebody can not satisfy his/her information need on the Web there are some possibilities. These possibilities can be summarized as follow

(a). The required information does not exist on the Web. In spite of this reality that the Web is huge and its size is increasing steadily, nobody claims that everything is on the Web. A considerable portion of human knowledge is still in printed format and the other media and there is not the electronic format for them.

(b) The required information exists on the Web but because of any reason the user can not find it. Exploring the possible reasons of the unsuccessfulness for locating an information item on the Web is a challenging issue and we can come from many possibilities.

Dennis et al. (2002) have classified web-based searching process into four categories or four paradigms as follow

1. *Unassisted Keyword Search* as the most common and straight forward way. When users just entered one or more search term in a general-purpose search engines like Google and search engine retrieves a list of ranked documents.
2. *Assisted Keyword Search* when search engines provide users with some facilities to expand their initial queries by search engine's suggestion for example in recent version of AltaVista.
3. *Directory-based Search* when in addition to query based search people can locate their information needs through browsing hierarchical categories like Yahoo.
4. *Query-by-example* when users after a search session will be provided with a list of document summaries which is used as the basis of a new query. They also mentioned that most web-based search technology combines more than one of these paradigms. Usually majority of people use search engines to satisfy their information needs.

2.2 Steps for searching

Step 1. Formulate and state the search expressions or query.

Step 2. Select appropriate search engine.

Step 3. Evaluate the search results.

Step 4. Repeat the previous steps until you find your answer.

Guidelines for Searching

- Use nouns as keywords and put the most important terms first in the keyword(s).
- Use the asterisk (*) to find plurals and other variations of words.
- Type keywords in lowercase to find both lowercase and uppercase variations.
- Use quotation marks to create phrases so that the search engine will look for the exact sequence of words.

- Use a hyphen alternative, when words or phrases could possibly be hyphenated.
- Limit your search by language.
- Before you use a search engine, read its HELP information.
- Use multiple search engines

2.3 Web searching tools

To facilitate orientation in the immense world of the Internet, there are a whole series of aids that facilitate the search. The most important searching tools are as follows

(1) search engines,

(2) multiple search engines,

(3) searchable directories,

(4) search engines with proper searchable directories,

(5) libraries and library directories,

(6) link sections of large topical sites,

(7) bookmark collections on personal pages

(8) Web rings, etc.

It is noteworthy that the most popular Web browsers (Internet Explorer, Netscape Navigator, Opera, and others) have built-in search options. Internet Explorer and Netscape Navigator address is to their search resources (button "Search" or option "Search Internet"), and the Opera browser allows both the use of so-called "hot keys" (e.g., in order to find a world in the Google search system, the combination "g [target term]" can be typed in the command line) and special search tools in some search systems (Google, AltaVista, All The Web, and others).

(1) Search engines

Include Web servers, which regularly read ("index") the contents of Web pages and place them in a general database. Search in this database is

performed using keywords related to the topic of interest. These are All The Web (www.alltheweb.com), AltaVista (www.altavista.com), Microsoft Network (MSN) (www.msn.com), Google (www.google.com), and Hot Bot (www.hotbot.com), as well as Direct Hit, Excite, Fast Search, Go (Infoseek), Inktomi, iWon, Lycos, NBCi, Northern Light, Teoma, WiseNut, etc. One of the best known Russian search engines is Punto (www.punto.ru).

(2) Multiple search engines

Are search engines that distribute the query among the specified search engines rather than perform the search on the WWW. There are two types of multiple search engines (i) online multi search engines that are Web sites with attached databases of many search engines and directories (All4One (all4one.com), AskJeeves (www.askjeeves.com), Dogpile (www.dogpile.com), Findit! (www.iTools.com/find-it/find-it.html), Hotsheet (www.hotsheet.com), Ixquick (www.ixquick.com), Mamma (www.mamma.com), Metacrawler (www.metacrawler.com), QueryServer (www.queryserver.com)) and (ii) desktop multi search engines that are software packages, which can be installed on every computer (BullsEye, Copernic, WebFerret, Express (Infoseek), EasySeeker, WebSeeker, X-Portal Findware, WebCompass, and Internet FastFind).

(3) Searchable directories

Are based on Web pages divided according to subject headings. The database directory is usually filled by hand. Search is performed with keywords and category names, as well as in related sections. Searchable directories are Yahoo!(yahoo.com), Open Directory Project (dmoz.org) and its "clone" in the Google system (directory.google MavicaNET (www.mavicanet.com), the Argus Clearinghouse (www.clearinghouse. net), Refer. Ru (refer.ru), and others. At least several hundreds of thousands of searchable directories exist presently, and new directories

appear constantly. Information on searchable directories is available on the Search Engine Colossus site (www.searchenginecolossus.com).Most searchable directories are sets of references to popular topics Auto and Moto, Sports, Acquaintances, MRZ, Shopping, Jobs, etc.

The following types of search systems (search engines and searchable directories) can be distinguished

(a) Worldwide systems, which refer to sites of different topics from different countries in different languages;

(b) National or regional systems, which survey the Web resources of a country or a region, e.g., Iceland on the Web (Iceland.vefur.is); Siftthru, the search engine of Africa (www.siftthru.com); and Sergiev Posad

Katalog resursov (sposad.al.ru); and(c) thematic systems, e.g., sites of general scientificinformation, where every scientist can find useful data

Sci Net (www.scinet.ee), Scirus (www.scirus.com),Russian scientific club (ruscience.newmail.ru), Sci-Seek (www.sciseek.com BioChemLinks (biochemlinks.com), Science Net (www.sciencenet. org. ru), Chemical Industry (www. Chemindustry.com) and science internet Russia(www.nir.ru).

(4) Search engines with proper searchable directories

Provide the possibility to search both in the base directories (option "Search in the directory") and in the whole Internet (option "Search in the Web) Yahoo!(www.yahoo.com), Lycos (www.lycos.com), Hot Bot(www. hotbot.com), MSN Search (www.msn.com),Excite (www.excite.com), LookSmart (www.looksmart.com), NBCi (www. nbci.com), Yandex (www.yandex.ru), Rambler(www.rambler.ru), etc.

(5) Libraries and library directories

Recently, large libraries have not only acquired virtual addresses, but they have also converted their catalogues into the virtual form. In the

site of a library (e.g., www.rgb.ru for the Russian State Library or www.cnshb.ru for the Central Scientific Agricultural Library), the user can find the section "Electronic Catalogue" (or "Digital Catalogue"), where bibliographies and frequently requested texts of periodicals or monographs are presented.

It is notable that, in other countries, electronic library services were developed long ago and not only in Web sites information about a publication and its abstract are also available via telnet, e.g., in the National Agricultural Library of the US Department of Agriculture (www.nal.usda.gov). In Russia, electronic library services are still at an early stage of development. For example, the site of the Central Scientific Agricultural Library presents only abstracts and not full texts of scientific articles. Purely electronic libraries should also be noted; these are large portals giving access to articles and monographs as simple text or pdf (portable document format) files. The latter are replicas of printed articles with figures and tables. The best known Russian electronic libraries are the Maksim Moshkow library (lib.ru) and the project of e-library.ru supported by the Russian Foundation for Basic Research. A kind of electronic library is the AGRIS section of the FAO head site (www.fao.org/agris).

It was created by the Food and Agriculture Organization of the United Nations (FAO) in 1974 as an agricultural database.

(6) The links of large thematic sites

Are convenient for users because they are divided according to subject headings, which facilitate the search for information. An example is provided by Links for Mineralogists (www.uni-wuerzburg.de/ mineralogie/links.html).

(7) Bookmark collections on personal pages

These personal collections of Internet users on their sites initiated the development of searchable directories.

(8) Web rings

Are interlinked groups of Web sites devoted to common subjects. Additional possibilities for data search are presented by discussion groups, chats, and forums (portals of interactive contacts with other Internet users), as well as news and news delivery services.

3. WEB SEARCH ENGINES

A web search engine is designed to search for information on the World Wide Web. The search results are generally presented in a line of results often referred to as search engine results pages (SERPs). The information may be a specialist in web pages, images, information and other types of files. Some search engines also mine data available in databases or open directories. Unlike web directories, which are maintained only by human editors, search engines also maintain real-time information by running an algorithm on a web crawler.

Search engines are programs that search documents for specified keywords and return a list of the documents where the keywords were found. A *search engine* is really a general class of programs, however, the term is often used to specifically describe systems like Google, Bing and Yahoo! Search that enable users to search for documents on the World Wide Web.

There are several web search engine. These search engines are classified in two types

- **Subject tree**
- **Robot**
  - Subject Tree subject search engines are similar to the way that libraries are organized in that they group web resources.
  - Robot search engines don't have subject arrangement; they are simply very large keyword searchable database.

How to use search engines A search can be made more effective by keeping some tips in mind while entering the search term

- On submitting multiple words, the engine will search initially for sites which contain all the words, and then sites which contain any of words.
- Submit a phrase enclosed within quotation marks without breaking it into individual words e.g oral cancer as "oral cancer".
- It is well to enter longer search terms to limit the result of search so that one may not have to made through thousands of items.

3.1 Some popular search engines- There are many popular search engines are as follows

1). AltaVista

AltaVista is a web search engine owned by Yahoo!. AltaVista was once one of the most popular search engines but its popularity declined with the rise of Google. In May 2011, Yahoo! shut down the site. Presently (August 26, 2012), the AltaVista website is up, and it is stated on the website that they are using the Yahoo search engine. Search results remain on the AltaVista pages. AltaVista was created by researchers at Digital Equipment Corporation's Network Systems Laboratory and Western Research Laboratory, who were trying to provide services to make finding files on the public network easier. Paul Flaherty was responsible for the original idea and two key participants were Louis Monier, who wrote the crawler, and Michael Burrows, who wrote the indexer. The name AltaVista was chosen in relation to the surroundings of their company at Palo Alto. AltaVista was publicly launched as an internet search engine on December 15, 1995 at altavista.digital.com.

2). HotBot

HotBot is a web search engine currently owned by Lycos. It was launched in May 1996 by *Wired* magazine. In the 1990s, it was one of the

most popular search engines on the World Wide Web. HotBot became a popular tool with search results served by the Inktomi database and directory results provided originally by LookSmart and then the Open Directory Project since mid-1999. Hotbot also used search data from Direct Hit for a period, which was a tool that used click-through data to manipulate results. It was launched using a "new links" strategy of marketing, claiming to update its search database more often than its competitors. It also offered free webpage hosting, but only for a short time, and it was taken down without any notice to its users. It was one of the first search engines to offer the ability to search within search results.

3). MetaCrawler

MetaCrawler is a metasearch engine that blends the top web search results from Google, Yahoo!, Bing (formerly Live Search), Ask. com, About.com, MIVA, LookSmart and other popular search engines. MetaCrawler also provides users the option to search for images, video, news, yellow pages and white pages. MetaCrawler hit its stride in the late 90's when the verb "metacrawled" was used by talk show host Conan O'Brien on TRL. It used to provide the option to search for audio. MetaCrawler is a registered trademark of InfoSpace, Inc. MetaCrawler was originally developed in 1994 at the University of Washington by then graduate student Erik Selberg, Bobby Kalili, and Professor Oren Etzioni as Selberg's Ph.D. qualifying exam project. Originally, it was created in order to provide a reliable abstraction layer to early Web search engines such as WebCrawler, Lycos, and InfoSeek in order to study semantic structure on the Web. However, it became clear that it was a useful service in its own right, and had a number of research challenges.

4). MSN

(MSN Originally The Microsoft Network; stylized as msn) is a collection of Internet site and services provided by Microsoft. The

Microsoft Network debuted as an online service and Internet service provider on August 24, 1995, to coincide with the release of the Windows 95 operating system. The range of services offered by MSN has changed since its initial release in 1995. MSN was once a simple online service for Windows 95, an early experiment at interactive multimedia content on the Internet, and one of the most popular dial-up Internet service providers. Today, MSN is primarily a popular Internet portal.

Microsoft used the MSN brand name to promote numerous popular web-based services in the late 1990s, most notably Hotmail and Messenger, before reorganizing many of them in 2005 under another brand name, Windows Live. MSN.com is currently the 17th most visited domain name on the Internet.

The concept for MSN was created by the Advanced Technology Group at Microsoft, headed by Nathan Myhrvold. MSN was originally conceived as a dial-up online content provider like America Online, supplying proprietary content through an artificial folder-like interface integrated into Windows 95's Windows Explorer file management program. Categories on MSN appeared like folders in the file system.

(5) WEB CRAWLER

A Web crawler is a computer program that browses the World Wide Web in a methodical, automated manner or in an orderly fashion.

Other terms for Web crawlers are *ants*, *automatic indexers*, *bots*, *Web spiders*, *Web robots*, or especially in the FOAF community—*Web scutters*. This process is called *Web crawling* or *spidering*. Many sites, in particular search engines, use spidering as a means of providing up-to-date data. Web crawlers are mainly used to create a copy of all the visited pages for later processing by a search engine that will index the downloaded pages to provide fast searches. Crawlers can also be used for automating maintenance tasks on a

Web site, such as checking links or validating HTML code. Also, crawlers can be used to gather specific types of information from Web pages, such as harvesting e-mail addresses (usually for sending spam).

A Web crawler is one type of bot, or software agent. In general, it starts with a list of URLs to visit, called the *seeds*. As the crawler visits these URLs, it identifies all the hyperlinks in the page and adds them to the list of URLs to visit, called the *crawl frontier*. URLs from the frontier are recursively visited according to a set of policies.

(6) YAHOO

Yahoo! Inc. (NASDAQ YHOO) is an American multinational internet corporation headquartered in Sunnyvale, California, United States. The company is best known for its web portal, search engine (Yahoo! Search), yahoo Directory, Yahoo! Mail, Yahoo! News, Yahoo! Finance, Yahoo! Groups, Yahoo! Answers, advertising, online mapping, video sharing, fantasy sports and social media website and services. It is one of the largest websites in the United States. According to news sources, roughly 700 million people visit Yahoo! websites every month. Yahoo! itself claims it attracts "more than half a billion consumers every month in more than 30 languages."

Yahoo! Inc. was founded by Jerry Yang and David Filo in January 1994 and was incorporated on March 1, 1995. On July 16, 2012, former Google executive, Marissa Mayer, was named as Yahoo! CEO and President, effective July 17. Yahoo has averaged one CEO a year for the last five years. In January 1994, Jerry Yang and David Filo were electrical engineering graduate students at Stanford University when they created a website named "Jerry's guide to the world wide web". David and Jerry's Guide to the World Wide Web was a directory of other websites, organized in a hierarchy, as opposed to a searchable index of pages. In April 1994,

"David and Jerry's Guide to the World Wide Web" was renamed "Yahoo!" The "yahoo.com" domain was created on January 18, 1995.

4. WEB RESOURCES

The concept of resource is primitive in the Web architecture, and is used in the definition of its fundamental elements. The term was first introduced to refer to targets of Uniform Resource Locators (URLs), but its definition has been further extended to include the referent of any Uniform Resource Identifier (RFC 3986), or Internationalized Resource Identifier (RFC 3987). In the Semantic Web, abstract resources and their semantic properties are described using the family of languages based on Resource Description Framework (RDF).

Web resource The concept - Online or electronic information becoming a major factor in information activities not only in developed countries but also in developing countries. Information architecture as an emerging discipline encompasses the design and maintenance of electronic spaces (E-Space) with an emphasis on access and usability.

The concept of web resource is being used interchangeably synonyms with online resource, digital resource and e-resources. But in simple connotations web resource can be regarded as the resource, documents or information available on the internet or world wide web.

Web resource Basic features - The following are the basic features of web resource:

- Web resources are accessed and browsed using HTTP protocol and files are exchanged using FTP.
- Created using HTML.
- Interactive in nature.
- Posse international reach/wider accessibility.
- Speed of communication.
- Unlimited capabilities.

4.1 TYPES OF WEB RESOURCES -

1). Institutional Repositories

An institutional repository is an online locus for collecting, preserving, and disseminating - in digital form - the intellectual output of an institution, particularly a research institution. For a university, this would include materials such as research journal articles, before (preprints) and after (post prints) undergoing peer review, and digital versions of theses and dissertations, but it might also include other digital assets generated by normal academic life, such as administrative documents, course notes, or learning objects.

The four main objectives for having an institutional repository are

- to provide open access to institutional research output by self-archiving it;
- to create global visibility for an institution's scholarly research;
- to collect content in a single location;
- to store and preserve other institutional digital assets, including unpublished or otherwise easily lost ("grey") literature (e.g., theses or technical reports).

2) Blogs

A blog (a portmanteau of the term *web log*) is a discussion or information site published on the World Wide Web consisting of discrete entries ("posts") typically displayed in reverse chronological order so the most recent post appears first. Until 2009 blogs were usually the work of a single individual, occasionally of a small group, and often were themed on a single subject. More recently "multi-author blogs" (MABs) have developed, with posts written by large numbers of authors and professionally edited. MABs from newspapers, other media outlets, universities, think tanks, interest groups and similar institutions account for an increasing proportion of blog traffic. The rise of Twitter and other

"micro blogging" systems helps integrate MABs and single-author blogs into societal new streams. *Blog* can also be used as a verb, meaning *to maintain or add content to a blog.*

The emergence and growth of blogs in the late 1990s coincided with the advent of web publishing tools that facilitated the posting of content by non-technical users. (Previously, a knowledge of such technologies as HTML and FTP had been required to publish content on the Web.).

History The term "weblog" was coined by John Barger on 17 December 1997. The short form, "blog," was coined by Peter Merholz, who jokingly broke the word *weblog* into the phrase *we blog* in the sidebar of his blog Peterme.com in April or May 1999. Shortly thereafter, Evan Williams at Pyra Labs used "blog" as both a noun and verb ("to blog," meaning "to edit one's weblog or to post to one's weblog") and devised the term "blogger" in connection with Pyra Labs' Blogger product, leading to the popularization of the terms.

Types

There are many different types of blogs, differing not only in the type of content, but also in the way that content is delivered or written.

Personal blogs The personal blog, an ongoing diary or commentary by an individual, is the traditional, most common blog.

Corporate and organizational blogs A blog can be private, as in most cases, or it can be for business purposes.

By genre Some blogs focus on a particular subject, such as political blogs, health blogs, travel blogs (also known as *travelogs*), gardening blogs, house blogs, fashion blogs, project blogs, education blogs, niche blogs, classical music blogs, quizzing blogs and legal blogs (often referred to as a blogs) or dreamlogs..

By device Blogs can also be defined by which type of device is used to compose it.

Reverse blog A Reverse Blog is composed by its users rather than single blogger.

3) Web OPAC

An Online Public Access Catalog (often abbreviated as OPAC or simply Library Catalog) is an online database of materials held by a library or group of libraries. Users search a library catalog principally to locate books and other material physically located at a library. The OPAC search form allows searching by any combination of author, title, subject/keyword, date or format. Items that do not indicate a holding location have not been barcoded, indicating that they may not be available. An OPAC (Online Public Access Catalog) is an online bibliography of a library collection that is available to the public. OPACs developed as stand-alone online catalogs, often from VT100 terminals to a mainframe library catalog. With the arrival of the Internet, most libraries have made their OPAC accessible from a server to users all over the world. User searches of an OPAC make use of the Z39.50 protocol. This protocol can also be used to link disparate OPCS into a single "union" OPAC.

(5) WEB SEARCHING BEHAVIOUR

According to oxford English dictionary defines "Behaviour" is normally associated with the psychological and emotional status, dynamic and paradigm of an individual or organization in relation or reaction to internal and external stimuli. It is expressed through attitude, beliefs, ideology, emotions, feelings, taste and value among other internally or spiritually driven expressions.

Searching for relevant information on the World Wide Web is often a laborious and frustrating task for casual and experienced users. To help improve searching on the Web based on a better understanding of user characteristics, we investigate what types of knowledge are relevant for

Web-based information seeking, and which knowledge structures and strategies are involved.

The World Wide Web is now known to be the richest source of information. The growth rate of the web is exponential. This paper explores different aspects of web search behaviour of university students, in terms of user's background and experience with web, purpose of use, searching skills, query formulation, frequency of use, favorite search engine, etc. All these factors contribute to the way in which the students search the web. Data have been collected from students of the Faculty of Economics and Management Sciences, University of the Punjab, Lahore through questionnaire. Key findings include the use of web for academic tasks, preference of Google, reformulation of query, use of basic and advance search features, browsing of first ten hits and problem of slow speed.

Usually, web searching behaviour means how users search their information, what type of behaviour should be adopted while searching on the world wide web.

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Chapter-2

Aligarh Muslim University & Department of Library & Inf. Science

CHAPTER 2

Aligarh Muslim University

An Introduction

The Aligarh Muslim University is a residential academic institution which was established in 1920. Sir Syed Ahmad Khan, a great reformist of his age, who felt the need of modern education for Muslims, started a school in 1875 which later became a college under the title of "Mohammadan Anglo Oriental College" and ultimately became a university. This is a premier university comes under central government. The President of India appoints the Vice Chancellor. It has several faculties and maintained institutions. It draws students from all over the country as well as from foreign countries.

Sir Syed created an institution which, first as M.A.O. College and then since 1920 as Aligarh Muslim University (AMU), became the generator of an amazing range of talent. Aligarh Muslim University offers more than 250 Courses in traditional and modern branch of Education. Sir Syed Ahmed Khan, a great social reformer of his age felt the need for modern education and started a school in 1875 which later became the Mohammedan Anglo-Oriental College and finally Aligarh Muslim University in 1920. This is a premier Central University with several faculties and maintained institutions and draws students from all corners of the world, especially Africa, West Asia and South East Asia. In some courses, seats are reserved for students from SAARC and Commonwealth countries. The University is open to all irrespective of caste, creed, religion or gender. It is ranked 8th best (2009 ranking) of all research universities in India by the Council of Scientific and Industrial Research (CSIR) of India. In one of his lecture Sir Syed stated: The main reason behind the

establishment of this institution, as I am sure all of you know, was the wretched dependence of Muslims, which had been debasing the position day after day. Their religious fanaticism did not let them avail the educational facilities provided by the government schools and colleges. It was deemed necessary to make some special arrangement for their education. Suppose for example, there are two brothers, one of them is quite hale and hearty but other is diseased. His health is on the decline. Thus, it is the duty of all brothers to take care of their ailing brother bear the hands in his trouble. This was the very idea which goaded me to establish the Mohammadan Anglo-Oriental College. But I am pleased to say that both the brothers get the same education in this college. All rights of the college appertaining to those who call themselves Muslims are equally related to those who call themselves Hindus without any reservations. There is no distinction between Hindus and Muslims. Only one who strive hard can lay claim to get the award. Here in this college Hindus as well as Muslims are entitled to get the stipends and both of them are treated at par as boarders. I regard both Hindus and Muslims army two eyes". Pandit Jawaharlal Nehru correctly saw the spirit of Sir Syed mission when he started in his autobiography. So, to this education he turned all his energy trying to win over his community to his way of thinking. He wanted no diversions or distraction from other directions: it was a difficult enough piece of work to overcome the inertia and hesitation of the Muslims. The Hindus, half a century ahead in Western education, could indulge in this pastime. Sir Syed decision to concentrate on Western education for Muslims was undoubtedly a right one. Without that they could not have played any effective part in the building up of Indian nationalism of the new type, and they would have been doomed to play second fiddle to the Hindus with their better education and for stronger economic position. The Muslims were not historically or ideologically

ready then for the bourgeois nationalist movement as they had developed no bourgeoisie, as the Hindus had done. Sir Syed activities, therefore, although seemingly very moderate, were in the right revolutionary direction. The establishment of M. A. O. College was described by Lord Lytton as an epoch in the social progress of India. Several decades later Sir Hamilton Gibb characterized the college as the first modernist institution in Islam.

History.

The university grew out of the work of Sir Syed Ahmad Khan who in the aftermath of the Indian War of Independence of 1857 felt that it was important for Muslims to gain education and become involved in the public life and government services in India. Raja Jai Kishan helped Sir Syed in establishing the university.

The British decision to replace the use of Persian in 1842 for government employment and as the language of Courts of Law caused deep anxiety among Muslims of the sub-continent. Sir Syed saw a need for Muslims to acquire proficiency in the English language and Western sciences if the community were to maintain its social and political clout, particularly in Northern India. He began to prepare foundation for the formation of a Muslim university by starting schools. In 1864, the Scientific Society of Aligarh was set up to translate Western works into Indian languages as a prelude to prepare the community to accept Western education. Sir Sultan Mahommed Shah, The Aga Khan III has contributed greatly to Aligarh Muslim University with financial support.

In 1875, Sir Syed founded the Mohammadan Anglo-Oriental College in Aligarh and patterned the college after Oxford and Cambridge universities that he had visited on a trip to England. His objective was to build a college in tune with the British education system but without

compromising its Islamic values. Sir Syed's son, Syed Mahmood, had studied at Cambridge and contributed a proposal for an independent university to the Mohammadan Anglo-Oriental College Fund Committee upon his return from England in 1872. This proposal was adopted and subsequently modified. Mahmood continued to work alongside his father in founding the college.

It was one of the first purely residential educational institution set up either by the government or the public in India. Over the years it gave rise to a new educated class of Indian Muslims who were active in the political system of the British Raj. When viceroy to India Lord Curzon visited the college in 1901, he praised the work which was carried on and called it of "sovereign importance".

The college was originally affiliated with the University of Calcutta and was transferred to the Allahabad University in 1885. Near the turn of the century it began publishing its own magazine, The Aligarian, and established a law school.

It was also around this time that a movement began to have it develop into a university. To achieve this goal, expansions were made and more programs added to the curriculum. A school for girls was established in 1907. By 1920 the college was transformed into Muslim University.

The first chancellor of the university was Sultan Shah Jahan Begum. In 1927, a school for the blind was established and, the following year, a medical school was attached to the university. By the end of the 1930s, the university had developed an Engineering faculty. Syed Zafarul Hasan, joined the Aligarh Muslim University in early 1900s as head of Philosophy Department, dean Faculty of Arts. He was a pro-vice chancellor before his retirement.

The university held its 58th annual convocation on June 18, 2008. Its chief guest was the former president of India, APJ Abdul Kalam and business tycoon Azim Hashim Premji, the chairman of Wipro Technologies Limited. They were conferred with an honorary degree of Doctor of Science. Former chief justice of India AM Ahmadi was present. 55 gold and 135 silver medals were awarded and more than 4500 degrees were conferred.

Academics

Aligarh Muslim University is a residential academic institution offering 280 courses in traditional and modern branches of education. It has almost 30,000 students, and over 2,000 faculty members with over 80 departments of study. It draws students from a number of countries, especially those in Africa, West Asia and South East Asia. In some courses, seats are reserved for students from SAARC and Commonwealth countries.

The 12 faculties are:

- Faculty of Agricultural Sciences
- Faculty of Arts
- Faculty of Commerce
- Faculty of Engineering and Technology
- Faculty of Law
- Faculty of Life Sciences
- Faculty of Management Studies and Research
- Faculty of Medicine
- Faculty of Science
- Faculty of Social Sciences

- Faculty of Education & Research
- Faculty of Theology
- Faculty of Unani Medicine

The university maintains interdepartmental research centres such as:

- Interdisciplinary Unit of Biotechnology
- Centre of Excellence in Material Science/Nanotechnology
- Centre for Comparative Study of Indian Languages and Culture
- Centre of West Asian Studies
- Centre of Woman Studies
- Centre of Nehru Studies
- Centre for Distance Education

Schools

- Abdullah Girls High School
- Abdullah Nursery School
- A.B.K. Union High School (boys)
- A.B.K. Union High School (girls)
- City High School (boys)
- City High School (Qazi Pada) (girls)
- S.T.S. High School (Minto Circle) (boys)
- Senior Secondary School (boys)
- Senior Secondary School (girls)
- Ahmadi School for the Visually Challenged

Colleges

- Zakir Hussain College of Engineering and Technology

- Jawaharlal Nehru Medical College
- Ajmal Khan Tibbiya College
- Abdullah Women's College
- UGC Academic Staff College
- Sir Ziauddin Dental College
- University Boys' Polytechnic
- University Women's Polytechnic

Vice-chancellors of AMU.

The vice-chancellors of AMU are.

1. Sir Mohd. Ali Mohammad Khan 20 December 1920;28 Febeuary 1923
2. Nawab Mohd. Muzammillah Khan Serwani(Acting) 1 March 1923;31 December 1923
3. Sahebzada Aftab Ahmad Khan 16 February 1924–15 November 1926
4. Ross Masud 25 January 1930– November 1933
5. Shah Muhammad Sulaiman 30 December 1938–8 December 1940
6. Nawab Mohammad Ismail Khan
7. Uwedur Rehman Khan Sherwani
8. SirZiauddin Ahmed 18 November 1935–25 January 1938
9. Dr.Zahid Hussain
10. Zakir Husain November 1948–September 1956
11. Bashir Hussain Zaidi October 1956–November 1962
12. Badaruddin Taiyabji November 1962–February 1965
13. NawabAli Yawar Jung March 1965–January 1968

14. Prof.Abdul Aleem January 1968–January 1974
15. Prof.Khaliq Nizami
16. Prof.Harbans Lal Sharma
17. Prof.A. M. Khusro January 1974–December 1978
18. Prof.Mohd. Shafi
19. Prof.J. N. Prasad
20. Prof.Q.H. Farooqi
21. Syed Hamid 10 June 1980–26 March 1985
22. Prof.K. M. Bahauddin
23. Syed Hashim Ali Akhtar IAS, April 1985–October 1989
24. Prof.Wasiurr Rehman
25. Prof.Ashok Bal
26. Prof.Mohd Naseem Faroqui October 1990–December 1994
27. Prof.Zillur Rehman Khan
28. Prof.Shamim Ahmed
29. Mahmoodur Rahman IAS May 1995–May 2000
30. Mohammad Hamid Ansari 28 May 2000–March 31, 2002
31. Prof.M. Salimuddin
32. Naseem Ahmad IAS 8 May 2002–7 April 2007
33. Prof. M. Salimuddin
34. Prof. P. K. Abdul Aziz 11 June 2007–17 January 2012
35. Prof.S. Mahdi Abbas Rizvi (Acting)
36. Prof.Sibgatullah Farooqui (Acting)
37. Dr. Noor Mohammad IAS (Acting)
38. Lt. General Zameerud-din Shah PVSM, SM, VSM 12 May 2012 to till now. (He is brother of Bollywood star Naseeruddin

About University Library

Maulana Azad Library: AMU, Aligarh

- The imposing Maulana Azad Library is considered one of the major libraries of the world, with glorious past and promising future. It stands as the largest university library in India and second largest in Asia with more than 11.5 lakh books/documents. Historically, a library was established with the foundation of Madarsatul-Uloom Musalmanan at Aligarh in 1877. The foundation stone was laid by Lord Lytton, the viceroy of India. That is why the library was originally named Lytton Library.
- The present seven-storied building surrounded by 4.5 acres of land was inaugurated by Pandit Jawaharlal Nehru, the prime minister of India in 1960 and was named as Maulana Azad Library, after Maulana Abul Kalam Azad, the great educationist, statesman and the first education minister of independent India.
- The library performs the functions of a national library so far as its collection of Oriental manuscripts are concerned. It is for these rich collections of immense research value that it is reckoned among the major libraries of the world. The oldest manuscript owned by the library is more than 1,400 years old — a fragment of the Qur'an transcribed by Hazrat Ali, the fourth caliph of Islam, written on parchment in Kufi script. Another rare collection is the unique Halnama of Beyazid Ansari.
- The library has a collection of early printed books. Some Sanskrit works translated into Persian have been preserved in the library. Other possessions include the Ayurved in Telugu and the Bhasa's in Malayalam script written on palm leaves. Abul Faiz Faizi, a scholar of Akbar's court, translated several Sanskrit works into

Persian, such as *Mahapurana*, *Bhagavad Gita*, *Mahabhart* and *Lilavati*; these are also available. Among the library's large collection of Mughal paintings is the painting of Red Blossom, by Mansoor Naqqash, the court artist of Emperor Jahangir.

- The library provides campus-wide access to online journals through a well-equipped computer lab. Digital resources on many subjects are made accessible through a Digital Resource Centre. All the issuable books in the library are bar-coded for automated check in and check out. It has started data mining in a recently developed Information Centre, where free e-resources are tapped for the benefit of the university community.

Department of Library and Information Science: AMU.

Department of Library and Information Science of Aligarh Muslim University is a premier institution in the field of Library and Information Science in India with a history that reaches back about sixty years. The foundation of the Department was laid way back in 1950-51 with the introduction of a 'Certificate Course in Library Science', by the University Librarian, Padma Shri Prof. S. Bashiruddin. Encouraged by the success of the certificate course, late Prof. S. Bashiruddin introduced 'Bachelor of Library Science' in 1958-59 with full time lecturers for the first time in the country. The Certificate course was discontinued in 1968-69. Subsequently, 'Master of Library Science' was introduced in 1970-71. Another pioneering step taken by the department in the year 1986-87 was the introduction of Library Science as a subsidiary subject at B.A level in the Faculties of Arts and Social Science. Realizing the need and importance of research in the subject, the Department started M.Phil/Ph.D. programmes since 1990-91. The teaching faculty of the department includes one Professor, four Associate Professors, two Assistant

Professors, and two Guest Faculties. Using the modern ICT facilities in the department, the faculty members are engaged in active research on various aspects of LIS. At present, the department has two ongoing projects sponsored by ICSSR and Department of Science and Technology (DST) Govt. of India. In the past also few UGC sponsored projects have been successfully completed. The guilds of academic activities such as conferences, seminars, workshops and extramural lectures of eminent scholars have always been regular features of the department.

Historical Background Of The Department: Quite conscious of the growing requirements of its users, the Aligarh Muslim University built a modern multi-stored building of Maulana Azad Library that was inaugurated by Late Pandit Jawahar Lal Nehru in 1960. The library which once started with a small personal stock of few hundred books of Sir Syed Ahmad Khan, the founder of his great seat of learning and which came to be known as the Lytton Library of the M.A.O. Collage in 1877,has now grown into a mammoth collection of about 10 lac volumes. It is now regarded as the second biggest University Library of the Indian-sub continent. However, the foundation of the dept of Library science was laid way back in 1950-51 with the introduction of a 'Certificate Course in Library Science' by the University Librarian, Late Prof. S. Bashiruddin. Meanwhile the department shifted from the rear portion of Maulana Azad Library to the present building in Kennedy Hall Complex in 1995.

In line with the UGC's model curriculum(2001), the syllabi of the courses offered by the department have been thoroughly revised and introduced from the session 2003-2004. A special feature of the revised syllabi is the emphasis on Information Technology and hands-on training on a number of library automation software packages. A well-equipped computer lab supports the revised syllabi with the internet facility. The

efforts are underway to convert the seminar library of the department into an electronic library. The teachers of the department have also received training in Information Technology within the country and also abroad.

About The Seminar Library of the Department:

- There are about 5115 books in the seminar library.
- There are about 18 journals in the seminar library, including national and international journals in printed form.
- Seminar library also has Mangla Collection which has 330 books. These books were gifted by Prof. P.B Mangla.
- The seminar Library is managed by three staff members namely, (i) Mrs. Saba Nasreen Bano (Seminar incharge), (ii). Mr. Riaz Abbas (Semi Professional Asstt), (iii) Mr. Zahid Hasan (Library Attendant)

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Chapter-3

Review of Related Literature

CHAPTER 3

REVIEW OF RELATED LITERATURE

Web Searching

Annie and Coiera (2008)[1] discussed about the world wide web as becoming an important source of information in health care consumer decision making however, little is known about weather searching online resource actually improves consumers understanding of health issues. The aim of this study is whether searching on the World Wide Web improves consumer's accuracy in answering health questions and whether consumers understanding of health issues is subject to further change under social feedback. This is the pre/post prospective online study. The searching across quality health information sources on the web can improve consumer's accuracy in answering health questions however a consumers confidence in an answer is not a good indicator of the answer being correct, consumers who are not confident in their answers after searching are more likely to be influenced to change their vein when provided with feedback from other consumers.

Thies, Provost and Mahtab (2002)[2] internet has the potential to deliver information to communities around the world that have no other information resources. High telephone and ISP fees in combination with low bandwidth connection make it unaffordable for many people to browse the web online. It develops TEK system to enable the users to search the web using only email. TEK stands for "time equals knowledge" since the user exchange time (waiting for email) for knowledge since the user exchanges time

waiting for e-mail) for knowledge. The system contains three components (i) the client, which provides a graphical interface for the end user (ii) the server, which performs the searches from MIT and (iii) a reliable email based communication protocol between the client and the server. TEK web resources to is for those people who otherwise would not be able to afford them. The TEK search engine: an internet search utility designed for low connectivity, low band width communities. TEK is part of a broader initiative within the MIT laboratory for computer science to find engineering "shortcuts" to help narrow the technology gap faced by the developing world. TEK is technical solution to a social need. From its conception, TEK is based on an understanding of the cultural and global context which needs to serve. TEK is designed to work in low connectivity, low bandwidth setting where the aim is to guarantee the deliver of "better information blower".

Buyukkokten and Pacpeke (2003)[3] deals with the problems of interacting with the world wide web through wireless connected personal digital assistance (PDAs). These problems include bandwidth limitations screen real estate shortage battery capacity etc., the benefits of the world wide web can be enhanced enormously if web content can be made available on handheld personal digital assistance (PDAs) by way of radio links, frequently information is needed most when a desktop machine is not available, or long boot times would be disruptive to the task at hand. Examples are information needs that arise while travelling, during business meetings that are awkward to interrupt. Web access from radio linked PDAs is an exciting prospect. Innovation in several areas, is, however, needed for effective use of the web. The problems of bandwidth limitations screen real

estate and the slow speed of pen based input standout among the challenges that must be addressed. The power browser supports and focused search activities on PDAs. It concentrates on the browsers supports for one particular phase of web based information retrieval: the exploration of single lights.

Fanglieu, Clement, Weiyi (2004)[4] proposes a novel technique to learn user profiles from users search histories. The user profiles are used to improve retrieval effectiveness in web search user profile and a general profile are learned from the users search history and category hierarchy respectively. These two profiles are combined to map a user query into a set of categories, which represent the users search intention and serve as a content to disambiguate the words in the users query experimental results indicate that the techniques to personalize which we search is both effective and efficient. The study describes a strategy for personalized of web : (i) a users search history can be collected without direct user involvement (ii) the users profile can be constructed automatically from the user's search history and is augmented by a general profile which is extracted automatically from a common category hierarchy (iii) the categories that are likely to be of interest for user are deduced based on his/her query and the two profiles and (iv) these categories are used as a content of the query to improve material effectiveness of web search.

Santanche and Medeiros (2005)[5] studied that one of the many challenges is to proactively support the reuse of digital artifacts stored in repositories all over the world. The goal is to contribute towards this issue, proposing a mechanism for describing and discovering artifacts called digital content components (DCCS). DCCS are self contained stored entities that may

comprise of any digital content, such as pieces of software, multimedia on text. The specification tapes advantage of semantic web standard and ontologies both of which are used in the discovery process. DCC construction and composition procedures naturally lend themselves to pattern matching and subsumption based search. The paper presented new approach to structure digital content in order to facilitate its reuse and discovery using standards. The work combines proposals to use interface specification, taxonomic relationships between concepts and interface matching to enhance digital artifacts searching, using semantic web based metadata and interface specifications in digital content component model. DCC diversity requires an expressive and flexible mechanism, equally suitable for software components, images, texts, videos and among others.

Finin, Ding and Pan (2005)[6] studied how semantic web offers an approach in which knowledge can be published by and shared among agents using symbols with well defined, machine interpretable semantics. The semantic web is a "web of data" in that (i) both ontologies and instance data published in a distributed fashion (ii) symbols are either literals or universally addressable 'resource' (URL reference) each of which comes with unique semantics; and (iii) information is semi structured. The semantic web distributed nature raises significant data access problems as to an agent discover, index, search and navigate knowledge on the semantic web? Swoogle (ding et al 2004) was developed to facilitate web scale semantic web data access by providing these services to both human and software agents. Swoogle is an implemented system that discovers, analyzes and indexes knowledge encoded in semantic web documents on the web. Swoogle provides web scale semantic web data access service, which helps

human users and software systems to find relevant documents, terms and triples, via its search and navigation services. Swoogle also provides a customatized algorithm inspired by googles page range algorithm.

Lifchits and Jain (2006)[7] described the inherent difficulty of processing noisy text, the potential of the web as a decentralized repository of human knowledge examines largely untapped during web search. The access to billion of binary relations among named entities would enable new search paradigms and alternative methods for presenting the search results. A first concrete step towards building large searchable repositories of factual knowledge is to derive such knowledge automatically at large scale from textual document. Although orders of magnitude higher than previous results, the extractions of one million facts of a given type at approximately 90% precision merely an intermediate check point with respect to the broader goal of building large repositories of facts. The next steps aim at increasing the number of entracted facts by another order of magnitude, while retaining similar precision levels, as well as performing experiments on other types of facts. (Including language spoken in country and person leader of company). It explores more of generalizing extraction pattern in automatically labeling and clustering the extracted facts.

Barbosa and Freire (2005)[8] described a new crawling strategy to automatically located hidden- Web data bases which aims to achieve a balance between the two conflicting requirements of this problem. The need to perform a broad search while at the same time avoiding the need to crawl a large number of irrelevant pages. The proposed strategy does that by focusing the crawl on a given topic; judiciously choosing links to follow within a topic that are more likely to lead to pages that contain forms; and by

employing appropriate stopping criteria. The new crawling strategy to automatically discover hidden web databases. He says that their form crawler is able to efficiently perform a broad search by focusing the search on a given topic; by learning to identify promising links; and by using appropriate stop criteria that avoid unproductive searches within individual sites. The experimental results show that the strategy is effective and that the efficiency of the form crawler is significantly higher than that of representative set of crawlers. They currently use the form crawler to built a hidden web database directory because it focuses the crawl on a topic, the form crawler is naturally suitably for this task.

Seda and Huseyin (2003)[9] described multimedia as proliferating on web sites, as the web continues to enhance the integration of multimedia and textual information. It examines that trends in multimedia web searching by emit users from 1997 to 2001. Results from an analysis of 1,025,910 excite queries from 2001 are compared to similar excite data sets of 1997 and 1999. The finding include (1) queries per multimedia session to have decreased since 1997 as a proportion of a general queries due to the introduction of multimedia buttons near the query box(2) multimedia queries identified are longer than on multimedia queries (3) audio queries are more prevalent than image or videos queries in identified multimedia queries. The study shows trends in multimedia web searching the most interesting findings was the impact of multimedia authors on excite users searching for multimedia despite the presence of multimedia buttons, many user's did not use the buttons may be they preferred to use the general search box. Overall the multimedia web searching is undergoing major change as web content and searching evolves.

Cheng and Weiyi (2008)[10] described the object search service provided by Falcons. For building an inverted index from query to Semantic Web Objects (SW objects), it presents a method to construct comprehensive textual description of semantic web objects. Furthermore, SW objects are also indexed from their classes and ancestor classes to support the class based query restriction. Especially, class subsumption reasoning on multiple vocabularies on the semantic web is performed, and a class recommendation technique is proposed to enable hierarchically navigating classes. In addition, a summarization method for SW object is devised to enable users to browse the summaries of objects. To promote the development of web data developers are suggested to reuse existing USLs to identify things to serve it the falcon system provides a keyword based object search service for the purpose of reuse as well as the information needs. In falcons objects search, queries can be refined by navigating class hierarchies, integrated from distributed vocabularies on the semantic web the technical contribution of this paper are: a method to construct comprehensive textual description of SW objects; an approach to indexing SW objects from their classes reasoning on multiple vocabularies; a class recommendation technique to enable navigating class hierarchies searching semantic web objects based on class hierarchies.

Smith and Fuchang (1996)[11] studied prototype visual information system; it is a system for searching images and videos on the World Wide Web. New visual information in the form of images, graphics, animations and videos are being published on the web at an incredible rate. However, cataloguing this visual data is beyond the capabilities of the current text based web search engines. The key to cataloguing is the marriage of text base

processing and content based visual analysis of the images and videos. The complete system by which visual information on the web are (i) collected by automated agents (ii) processed in both text and visual features domains (iii) catalogued (iv) index for fast search and retrieval. It introduced a new robust system that provides the essential function of cataloguing the visual information on the web. The system automatically collected the images and visual catalogue them using both textual and visual information. Developing a web application is very easy to use and provides great flexibility and functionality for browsing and searching for images and videos. In the initial implementation, the system has catalogued and provides searching through more than one half million images and videos.

Kushal and Locates (1998)[12] investigates the information retrieval from hypertext on internet world wide web. Significantly main and interaction effects word found for both link density (number of links per display) and display format (in paragraphs on lists) on search performance. Low link densities displayed in list format produced the best over all results, in terms of search accuracy search times; number of links explored, and search task prioritization. Covered density affected user ability to prioritize search task and introduced more accurate searches, while list displays positively affected all aspects of searching except task prioritization..It supports the use of fewer links to focus searching and exploration and possibly, reduce cognitive loan. It also supports listing links rather than embedding them in text to reduce the additional information processing demands of reading and link extraction. The observed differences in expert performance give evidence to the notion that successful hypertext navigation is a learned

analytical strategy. It is unclear however, whether aspects of search performance other than prioritization are affected by browsing expertise.

Navarro-Prieto and Scaife (1999)[13] described cognitive strategies of web searching through which usability tests have shown that users often get lost very easily on the internet when looking for information. Why it is happened and how it can be avoided, the goal of their research was to develop an empirically based model of web searching, to help explain how people search for information on the web and to develop guidelines for supporting web searching. The analysis of their data from this study focused on the cognitive strategies followed by the users, their level of experiences and the type of searching task. There are three searching strategies discussed as follows (i) top down strategy (ii) bottom up strategy (iii) mixed strategy. This paper is related to the objectives of this study. A theoretical framework was developed that could explain 20 web searching behaviours. It proposed three dimensional models that were useful in analyzing the interaction between participants, their task and the external representations. Thus, the study finds that the cognitive strategies developed by participants depend on the way the information they are looking for is structured, as well as their level of experience

Web Searching Engine.

Hong (2001)[14] studied that when some of the studies investigated query reformulation in traditional online system, there has been little understanding of how users reformulate their queries multiple times within search session on the web. It describes the patterns and sequences of query reformulation based on query logs from web search engines. The data set

contained only search sessions based on which multiple query modifications were made, the analysis of data resulted in 3 facets of reformulations: content format and resource. Each facet was further categorized by 10 sub-facets. The results show that while most query reformulation involves content changes, about 15% of reformulation is related to format modifications. It identifies the facets and patterns of multiple query reformulations in web searching by examining the sequences of query reformulation within search sessions. The result of this study shows the existing web search engine features and offers suggestions for improvement. It explores users multiple query reformulations in searching a web search engine, and investigates query reformulation within respect to multiple facets (i.e. content, format, resource).

Silversteim and Henzinger (1999)[15] described the analysis of an AltaVista search engine query log consisting of approximately 1 million entries for search request over a period of six weeks. They also presented analyses of individual queries, query duplication, and query session. The result of correlation analysis of the log entries studying the interaction of terms within queries. The data supports the conjecture that web users differ significantly from the user assumed in the standard information retrieval literature. The structure of paper was divided as follows: section 1 describes Alta vista search environment and query log section 2 and 3 contain the analysis involving single items and the Co relation analysis respectively. Section 4 concludes the work and paper. The work presented an analysis of AltaVista query log, and also confirmed to the conjuncture that an average web user differs significantly from the user model assumed by the information retrieval community. The correlation analysis considered the

queries of all users and found the strongest correlation resulted from short queries that were actually single term phase queries.

Menczer, Akavipat and Shin (2004)[16] eloborated 6 search network which stated that a collaborative peer network application called 6 search (6s) which proposed to address the scalability limitations of centralized search engines. Each peer crawls the web is a focused way, guided by the user's information context. This way better (distributed) coverage can be achieved each peer also acts as a search servant by submitting and responding to queries from its neighbors. This search process has no centralized bottleneck. A local adaptive routing algorithm is introduced to dynamically change the topology of the peer network based on a simple learning scheme drive by query response interactions among neighbors. A collaborative peer network application called, 6 search (6s), which is intended to study the idea that the scalability limitations of centralized search engines can be over come via distributed web crawling and searching an adaptive routing algorithm to dynamically change the topology of the peer network based on commonality of interests among user, so as to avoid the problems of flooding queries which has plagued other attempts to search over peer network.

Pan and Thomas (2006)[17] ontologies are important components of web-based applications. While the Web makes an increasing number of ontologies widely available for applications, how to discover ontologies in the Web becomes a more challenging issue. Existing approaches are mainly based on keywords and metadata information of ontologies, rather than semantic entailments of ontologies. A Semantic Web engine, called ONTOSEARCH2, which searches and queries Web ontologies by creating

and storing a copy of ontologies in tractable description logic. ONTOSEARCH2 allows formal querying of its repository, including both the structures and instances of ontologies, using the SPARQL query language. ONTOSEARCH2 is able to reliably query large data sets faster than comparable database driven knowledge management systems. The recall and precision figures from the tests performed are encouraging but there are situations in which incomplete results can be returned, further work on the approximation component of ONTOSEARCH2 will try to fix this. Additional experimental work is also required to maximize the performance of the database subsystem.

Jansen and Spink (2003)[18] described the placement of websites in ranked retrieval and the viewing patterns of web search engine users is a crucial issue for web site owners and web search engines. However, little large scale research has examined the viewing patterns of users of commercial web search engines. However, little large scale research has examined the viewing patterns of users of commercial web search engine. The research result reported have address three questions, (1) How many pages of result do web search engine users examine (2) How many web documents and web search engine users view when searching the web (3) how relevant are the web documents that they are viewing. The findings from large scale research into the page viewing patterns of users of the FAST commercial web search engine using data samples representing thousands of users. It examines common pattern concerning the number of pages of results viewed, the number of pages views and the relationship between the number of queries, the number of actual websites visited and time between multiple sites visits. The result provide important insights into the current state of

web searching and web usage the short session lengths, combined with short queries have been puzzling issues for designers of web information systems. It does not seem to be a successful strategy to maximize recall on precision the standards of metrics for information retrieval system performance. **Spink, Welfrom and Saracevic (2001)**[19] described the actual web searching by the public, it analyzes over one million web queries by users of the excite search engine. It finds that most of the people use few search terms, few modified queries, view few web pages, and rarely use advanced search features. A small number of search terms are used with high frequency and a great many terms are unique, the language of web queries is distinctive the queries about recreation and entertainment rank highest. The findings of this study are compared to data from two other large studies of web queries. It provides an insight into the public practices and choices in web searching. The people are spending more and more time creating, seeking, retrieving and using electronic information. But their interactions with web search engines are short and limited to adjust to these factors and human behaviours. There should be raid a new generation of web searching tools that work with people to help them persist in electronic information seeking to resolve their information problems because of this study and author and analization of a data set of 1.7 million excite queries from 1999.

Rose and Levison (2001)[20] presented a framework for understanding the underlying goals of user searches and their experience in using the framework to manually classify queries from a web search engine. The analysis suggest that so called "navigational searches are less prevalent than generally believed, while a previously unemployed "resource seeking" goal may account for a large fraction of web searches. The knowledge of user

search goals might be used to improve future web search engines. Author created a framework for understanding the underlying goals of search, and has demonstrated that the framework can be to used associate goals with queries given limited information. The analysis of user goals has yielded two implicated patterns in web search. First, so called "navigational" queries appear to be much use prevalent than generally believed, second, many queries appear to be motivated by a previously unexplored goal involving the need to obtain online and offline resources.

Jansen and Spink (2006)[21] studied the web and especially major web search engines as essential tools in the quest to locate online information for many people. The results from research examines characteristics and changes in web searching from nine studies of five web search engines based in the US and Europe. It compares interactions occurring between users and web search engines from the perspectives of session length, query length, query complexity and content viewed among the web search engines. this study includes: (i) a 1997 study of the excite web search engine (ii) a 1998 study of the fireball web search engine (iii) 1998 study of the site vista web search engine (iv) 1999 study of excite web search engine (v)2000 study of the BIWIE web search service (vi) a 2001 study of all the web.com web search engine (7) a 2001 study of excite web search engine (viii) a 2002 of the all the web.com and (ix) a 2002 study of Alta Vista. Collectively the nine studies represent 287,212,814 (over 1 billion) queries that people submitted to the web search engine. Findings of this study indicate that the interactions between help search engines and searchers now becoming more complex and in some respects are becoming less complex. The comparative

analysis also indicates that finding o a study focusing on web search engine can not be applied wholesale to all web search engines.

Web Search Behaviour

Rieh (2004)[22] mentioned the objective of this study as to characterize home as an information use environment and to identify a range of information seeking and web search behaviours at home. Twelve Northern California residents were recruited and the data as collected through semi structured home interviews based on a self reported search activities diary that subjects kept over a 3-5 day period. The data were analyzed on four level : home environment, information seeking goals, information retrieval interactions and search query. Based on the findings the relationship among home environment, web content, and interaction situation were identified with respect to user goals and information seeking behaviour. According to this study the home environment provides a broad information and communication information seekers in which the home constitutes objective reality. In this model content is defined as information channels available at home. Particularly the web is considered to be primary information channel.

Aula and RM (2010)[23] discussed about the behavioural signals that suggest that a user having trouble in search task. Firstly, author may have a lab study with 23 users to gain a preliminary understanding on how users behaviour changes when they findings the information they are looking for. The observations then are tested with 179 participants who all completed on average of 22.3 tasks from a pool of 100 tasks. The large scale study provided quantitative support for our qualitative observations from the lab study. When having difficulty in finding information users starts to

formulate more diverse queries, they use advanced operations more and they spend a more time on the search result page as compared to the successful task. It specifically focuses on measurable behavioural signals that indicate that users are struggling in searching tasks. It shows how a combination of a similar scale lab study and a larger scale online study compare each other.

Maghferat and Wolfgang (2010)[24] presented an empirical gender study in the context of information science. It discusses an exploratory investigation, which provides empirical data about differences of information seeking activities by female and male students. The research focus was on wheather there are gender specific differences when people perform searches with the aid of general search engines and specialized deep web information resources. It has been observed how the participants behaviour in getting information and how the gender groups differ from each together. Information search behaviour is a theme investigated extensively in information retrieval. How the information need is triggered and how people behave to fulfill it are fundamental questions in the investigation of information search behaviour. The aim of this study was to find out weather differences between women and men occur in their information search behavior. The research and the obtained result data showed a small difference at least between the choice of search of search sources and the grade of satisfaction with these sources as well as the obtained results.

Karen and Barry (2007)[25] discussed about the result of recent analysis of the mobile interval habits of more than 600,000 European MI users, with a particular emphasis on the emerging interest in Mobile search. It considered a manage of factors including whether there are key differences between

browsing and search behaviour on the MI compared to the web. It highlights how browsing continues to dominate mobile information access, but go on to show how search is becoming an increasingly popular information access alternative especially in relation to certain types of mobile handsets and information needs. To investigate the information access behaviour of more than 600,000 European mobile internet (MI) users with a view to better understanding their access patterns and information usage strategies. author especially interested in the growing usage of mobile search as a powerful affordable content discovery technique and how mobile users were beginning to avail themselves of new mobile search services. Overall, mobile information access to be dominated by portal browsing activities with 94% of sessions consisting of just browsing.

Fidel and Davies (1999)[26] analyzed the web searching behaviour for home work assignments of high school students through field observations in class , and through interviews with various participants, including the teacher and librarian, students performed focused searching and progressed through a search swiftly and flexibly they used landmarks and assumed that one can always start a new searches but the results impatient with slow response. The students enjoyed searching the web searching because it had a variety of formats, pictures, it covered a multitude objects and it provided easy access to information. The potential of the world wide web as a tool for information gathering and learning is enormous, and much of it has not been envisioned as yet. The study adds too many that show this potential can not be realized without user training and systems design that accommodates users information seeking and searching behaviour. The study provides additional evidence that analyzing users seeking and searching behavioural

as it occurs in actual situations is a promising method for evaluating the effectiveness of this behaviour and for suggesting improvement in system design and in search environments.

Strube (2000)[27] searching for relevant information on the world wide web is often a laborious and frustrating task for casual and experienced users. For improving on the web based on a better understanding of user characteristics, thus, investigates that what types of knowledge are relevant for web based information seeking, and which type of knowledge structures and strategies are involved. There are two experimental studies are presented, which address these questions from different angles and with different methodologies. In the first experiment 12 established internet experts are first interviewed about search strategies and then perform a series of realistic search tasks on the WWW. From this study a model of information seeking on the www is derived and then tested in second study. In the second experiment two types of potentially relevant types of knowledge are compared directly. Effects of web experience and domain specific background knowledge are investigated with a several search tasks in an economics related domain (introduction of the EURO currency). It finds differential and combined effects of both web experiences and domain knowledge: while successful search performance requires the combination of the two types of expertise specific strategies directly related to web experience or domain knowledge can be identified.

Eytan, Daniel and Brain (2007)[28] presented a large scale study correlating the behaviours of internet users on multiple systems ranging in size from 27 million queries to 14 million blog posts to 20,000 news articles. It formulized a model for events in these time varying datasets and studied

their correlation. It creates an interface for analyzing the datasets, which includes a novel visual artifact, the DTW radar, for summarizing difference between time series using the tool they identified a number of behavioural properties that allow to understand the predictive power of patterns of use. It describes the first large scale comparison and correlation study of multiple internet behavioural datasets. This creates a model for these events hat allows to automatically compare the reaction of user population on one medium be it search engines, blogs, or community sites to the reactions on another. It implements a visual tool, the DTW Radar, which allows users to view a summary of the differences between multiple time series and search for specific patterns why we search : visualizing and predicting user behaviour.

Rieh (2003)[29] investigated the situational elements of the home as web use environment examining how domestic settings influenced peoples web search activities and behaviours. Traditionally, information searches have been conducted in public places in quest of work. Or school related information. However, as greater number of people gain access to the internet home, a shift has occurred in both location and purposes of web searches from public to private and from work to personal interests. As the web has evolved into most popular information retrieval system in everyday life, it is important to study web search behaviour in real settings and home is obviously one such place. Probably one of the most significant findings of this study was that the home provided a unique situation in which people conducted web searches in ways differing from those in the workplace while the subject visited only a few websites that were diversely relevant to their

work, they looked for many diverse kinds of information and therefore engaged in home search activities more frequently.

Agichtein, Brill and Dumais (2006)[30] showed that incorporating user behaviour data can significantly improve ordering of top results in real web search sitting. It examines alternatives for incorporating feedback into the making process and explore the contributions of user feedback compared to other common web search features. The results of a large scale evaluation over 3,000 queries and 12 million user interactions with a popular web search engine. Incorporating implicit feedback can augment other features, improving the accuracy of a competitive web search ranking algorithms of as much as 31% relative to the original performance. It explored the utility of a incorporating noisy implicit feedback obtained in a real web search setting to improve web search ranking. A a large scale evaluation over 3,000 queries and more than 12 million user interactions with a major search engine, establishing the utility of incorporating "noisy" implicit feedback to improve web search relevance.

Web Searching service

Jansen (2003)[31] studied the effect of query structure on retrieval by web search services. The fifteen queries were selected from transaction log of major web search services in simple query form with no advance operators (e.g. Booleans operations, phrase operators etc.) and submitted to five major search engines i.e. AltaVista, Excite, FastSearch, Infoseek, and Northern light. Further, the implications for design of web search services and directions for future research. The information retrieval system searchers seldom views advance searching techniques, such as Boolean operation and

phrase searching. The use of more complex queries appears to have a very small impact on the result retrieved. This research indicates the typical web searcher is adhering to a very reasonable course of action by entering simple queries. He says that this research also supports reviews, that implementations of Boolean searching have many positive features that overcome the Boolean model. These practical features are sometimes ignored in the theoretical criticism of Boolean systems additionally as it validates the position that the short comings of Boolean systems while theoretically valid have limited practical impact, given the manner in which most people search.

Clausen, Engelbercht and Mayer(2003)[32] disscussed about PROMS, a computer music service under development at the University of Bonn, Germany, aims at designing and implementing procedures for music search. Algorithm for searching a music pattern, e.g. a melody or a sequence of chords, in a score- like format. Their algorithm is a variant of how classic inverted file index approach for text retrieval. A prototype is implemented and its performance investigated. Finally, it indicates how to extend this technique to fuzzy search, to a search with up to mismatches and to transposition-invariant search. PROMS, a web based computer-music service under development at the University of Bonn; Germany is the part of the MIDILIB project. It shows how to perform exact polyphonic musical pattern matching efficient by using an inverted file index.

Rodden and Blackwell(2004)[33] discussed about the mobile devices (such as PDAs and smart phones) have small screen yet most HTML pages are designed with the assumptions that will be displayed on a standard desktop screen, meaning that they can be difficult to view on a mobile devise. Thus,

the web authors could use a generic documents description format that would allow flexible and adaptive lay outs of documents content on various devices. Overview Plus detail: the Generic solutions to the problem of viewing large amount of information. In a small area, this is known as overview plus detail displays.In Order to make optimum use of the small displays on mobile devices for web searching it is necessary to separate overview and detail concerns of the search task and its different visual renderings. In this there are three designs that achieve this in different ways. Smart view uses compressed overview visualizations to facilitate navigation to structurally significant region page, search mobile annotates that overview to show the locations of search terms of interest. The search mobile booklet view presents the overview of a set of returned pages in a cache, ordered according to relevance. It also discuss about the overview plus detail visualizations, these solutions suits some task and information structured better than others.

Setberg and Etzione (1995)[34] discussed about metacrawler, a fielded web service that represent the next level up in the information "food chain". The metacrawler provide a single, central interface for web document searching. Upon receiving a query, the metacrawler posts the query to multiple search services in parallel, collates the returned references, and loads those references to verify their existence and ensure that they contained relevant information. The metacrawler is sufficiently light weight to reside on a users machines which facilitates customization, privacy, sophisticated filtering of references and more. The metacrawler also serve as a tool for comparison of diverse services. The metacrawler, a meta service for web searching with additional feature designed to more references of higher quality than

standard search services, they demonstrate that uses follow references reported via variety of different search services, confirming that a single service is not sufficient.The individual service data extracted from the metacrawler logs in compiling evidence concerning of each service.

Web Searching Tools

Winship (1995)[35] analysed of some of the search tools using as a guide established principles for assessing electronic sources. It is impossible to cover all the search tools so he considers some of the more established and popular ones, namely four search tools: (i) World Wide Web Worm developed by Oliver McBryan at the University of Colorado (ii) WebCrawler developed by Brian Pinkerton at Washington State and now owned by America Online (iii) Lycos produced at Carnegie Mellon and now partly funded by Microsoft, It covers two subject collections with a search facility: (a) Galaxy from EiNet (Enterprise Integration Network), a Texas Internet services company (b) Yahoo, developed originally at Stanford University and now run as an independent company. Retrieval performance would be most important, but record structure and search techniques look to be of greater significance. For relevant retrieval specifying fields or sources may be necessary, perhaps after an initial broad search. In some circumstances it may be more fruitful to use browsable collections like the BUBL Subject Tree, especially if they also include gopher material, which is becoming too easily overlooked in the Web dominated world.

Web Browser

Liberman (1995)[36] studied letizia as a user interface agent that assets a user browsing the world wide web. As the user operates a conventional web

browser such as Netscape, the agent tracks user behaviour and attempts to anticipate items of interest by doing concurrent autonomous exploration of links form the users current position. The agent automates a browsing strategies consuming a best first search augmented by heuristics infuring user interest from browsing behaviour. And agent, litizia, which operates in tandem with a conventional web browser such as mosaic and netscape. The model adopted litizia is that search of information is a cooperative venture between the human user and intelligent software agent. Litizia save the user considerable time that will be a best explorer "dead-end" links. Litizia does not have natural language understanding capacity, so its content model of document is simply as a list of keywords. Litizia is implemented in Macintosh common lisp. It uses netscape as a web browser and user interface.

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Chapter-4

Methodology

CHAPTER 4

METHODOLOGY

This chapter deals with the methodology used in the study and has been discussed under the following heading

- Need and Selection of problem
- Limitation of the study
- Objective of the study
- Hypotheses
- Methodology of the study
- Tools used for the study
- Data analysis method

Need and Selection of problem

Web resources are becoming very important these days as they are more up to date, and can be accessed anywhere, crossing all geographical boundaries, such resources add value in conducting R&D activities. Therefore, the topic web searching behaviour among the PG student and Research Scholars in the Department of Library and Information Science, AMU, Aligarh was selected for the study with the purpose of identify the information searching behaviour of the respondents with regard to web resources.

Limitations of the study

1. The area of the study is restricted to the Department of Library and Information Science, AMU
2. The responses have been taken only from Research Scholar enrolled in the academic year 2011-12 and PG students for the session 2011-12 and 2012-13.

Objectives of the study

1. To identify the frequency of use of web resources
2. To identify the purpose and use of web resources
3. To identify the type of material and services searched by the PG students and research scholars

4. To find out the various search techniques and tools use of Research Scholars and PG Students.
5. To find out the status of infrastructure in the department for use of web resources.
6. To know the problems faced while searching the web resources
7. To identify the requirement of training programmes.
8. To examine the level of satisfaction with the web resources

Hypothesis

1. Most of the Research Scholars and PG students prefer the usage of web resources for study purpose.
2. Both use online journals heavily.
3. Most of the Research Scholars and PG students are satisfied with the use of web resources.

Methodology

In order to conduct the survey on web searching behavior, the following methods was used.

Sample Population

The population are divided into two categories, research scholars – there are 13 research scholars in the Department of Library and Information Science enrolled in the academic year 2011-2012. The second category includes PG students(M.L.I.Sc.) of the Department of Library and Information Science enrolled in the session 2011-2012 and 2012-2013 there are 68 PG students in the library science department.The total 61 questionnaire were distributed and 40 filled questionnaire were return back.

Tools for the study

Questionnaire method were used as a tool for collecting the necessary data. Questionnaire is a major and popular instrument of the survey studies. The set of questions are framed in such a way that the relation of one question to another is readily apparent to the respondent and the sequence of the questionnaires must be clear. In this study a questionnaire was prepared relating

to the web resources and administered to the P.G. students and Research Scholar of the department.

Construction of questionnaire

Structured consulting of 16 questions related various aspects of web resources.

Pilot survey

Pilot survey means a survey proceeding the main study usually to check the validity of the study design. Pilot survey deciding the present questionnaire is relevant on validated for the purpose of the study or hot the investigation has distributed questionnaires among 15 users in which 10 are PG students and 5 are research scholars in the Department of Library and Information Science for conducting the pilot survey, which proved helpful in modifying the questionnaire suitably.

Data collection

The total of 63 questionnaires were distributed among the research scholars and PG students. 40 duly filled questionnaires which were return back thus 40 questionnaires were selected for analysis of data.

Respondents	**Questionnaire Distributed**	**Questionnaire Return**	**Percentage**
Postgraduate	48	31	64.58%
Research scholar	13	9	69.23%

Data analysis methods

The data collected through questionnaire was organized and tabulated by using statistical method tables and percentage.

Chapter-5

Data Analysis and Interpretation

CHAPTER-5

Data Analysis and Interpretation

The chapter deals with different aspects of data collection, analysis and interpretation. It is the main constituent of the whole dissertation which portraits the mirror image of the various objectives of the study undertaken. It is done to assemble and collaborate the exposed facts with the collected data in order to fulfil the research objectives of the study. It helps to convert collected data into meaningful research findings. The collected data has been organized and tabulated by using statistical method, tables, graphs and percentages. The purpose of analysis is to shape the data into comprehensible and interpretable structure so that the relation of research problems can be studied and tested. This chapter contains the analysis of responses received from the Research Scholars and PG Students of the Department of Library and Information Science, Aligarh Muslim University. The various facets that have been included in the present study have been discussed in the following sections:

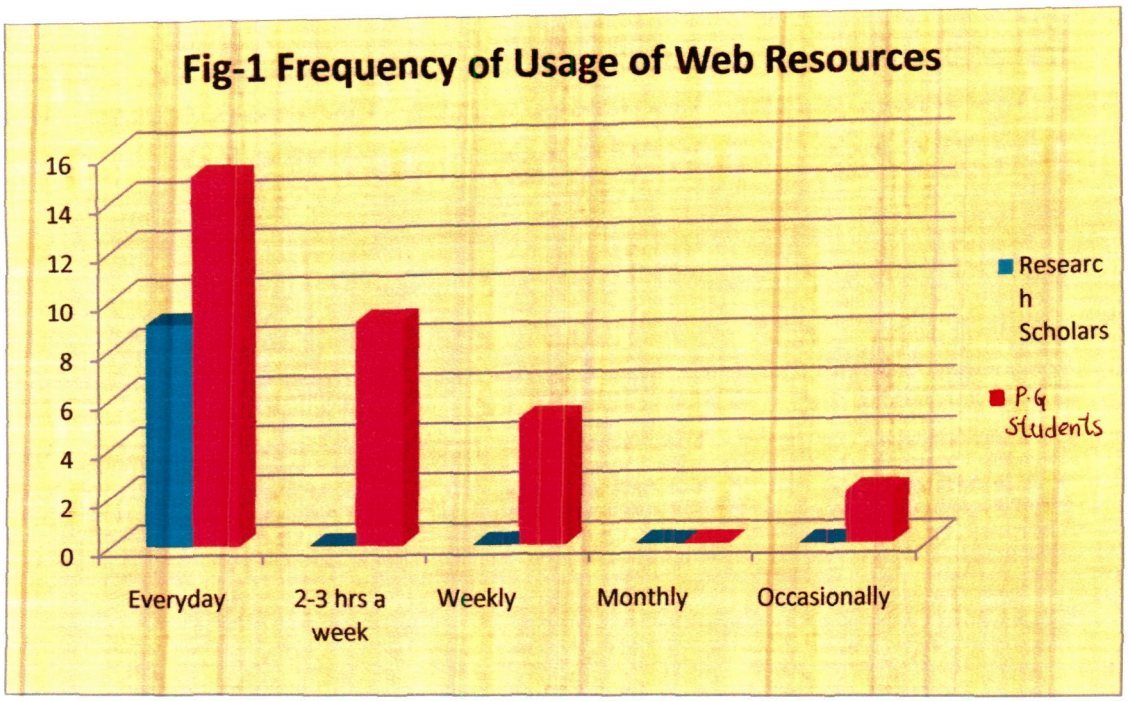
5.1 Frequency of Usage of Web Resources

The respondents were asked about the rate of using the web resources and it was revealed that all the Research Scholars use the web resources everyday while the majority of the PG students (48.38%) used the web resources every day, followed by 29.03% of PG students who used 2-3 hours a week, 16.12% use weekly and only 6.45% students responded that they use the web resources occasionally. The details are outlined from the table-1 below:

Table-1 Frequency of Usage of Web Resources

Frequency	Research Scholars	PG Students
Everyday	9 (100%)	15 (48.38%)
2-3 hrs a week	0	9 (29.03%)
Weekly	0	5 (16.12%)
Monthly	0	0
Occasionally	0	2 (6.45%)

(Figures in parenthesis represent % age)



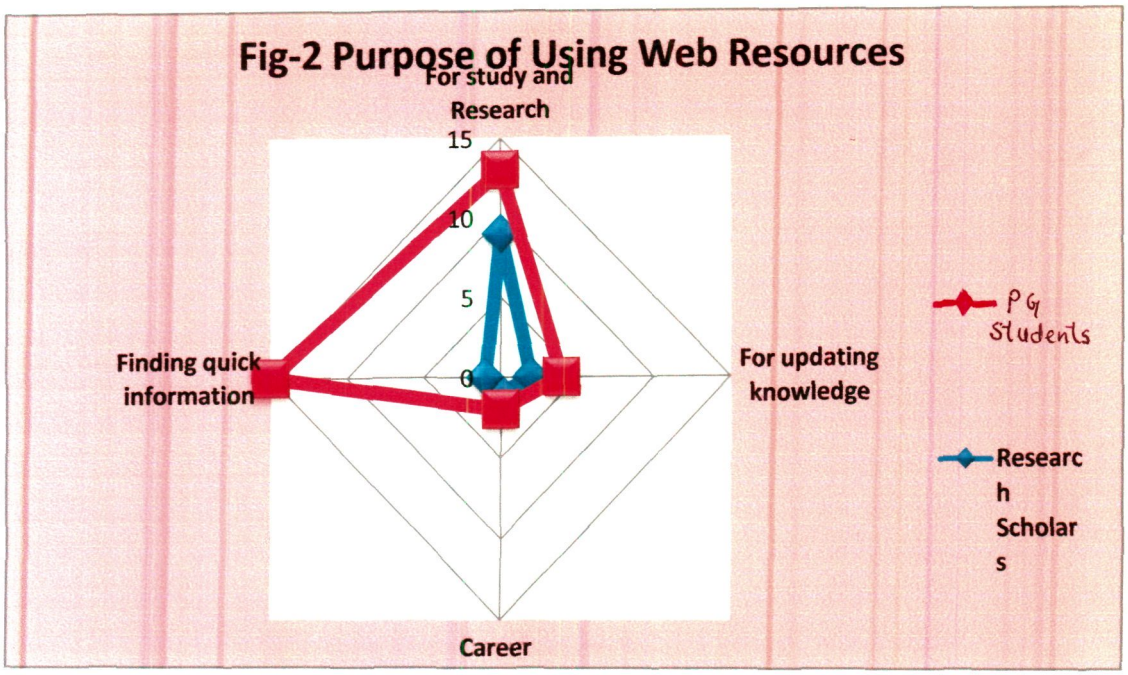
5.2 Purpose of Using Web Resources

It counts a lot to determine the purpose with which the users are using the web resources and bear the direct methods of selection of the online resources and other related facilities associated with them. The table-2 shows that the majority of the PG students i.e., 48.38% use web resources for finding quick information, 41.93% express the purpose as study and research, 12.90% for updating their knowledge and the least i.e., 6.45% for the career development. While as, the majority of the research scholars use web resources for the study and research and a few portion of them are using the web resources for the purpose of updating their knowledge and career development.

Table-2 Purpose of Using Web Resources

Purpose	Research Scholars	PG Students
For study and Research	9 (100%)	13 (41.93%)
For updating knowledge	2 (22.22%)	4 (12.90%)
Career development	1 (11.11%)	2 (6.45%)
Finding quick information	1 (11.11%)	15 (48.38%)

(Multiple Answers Permitted)



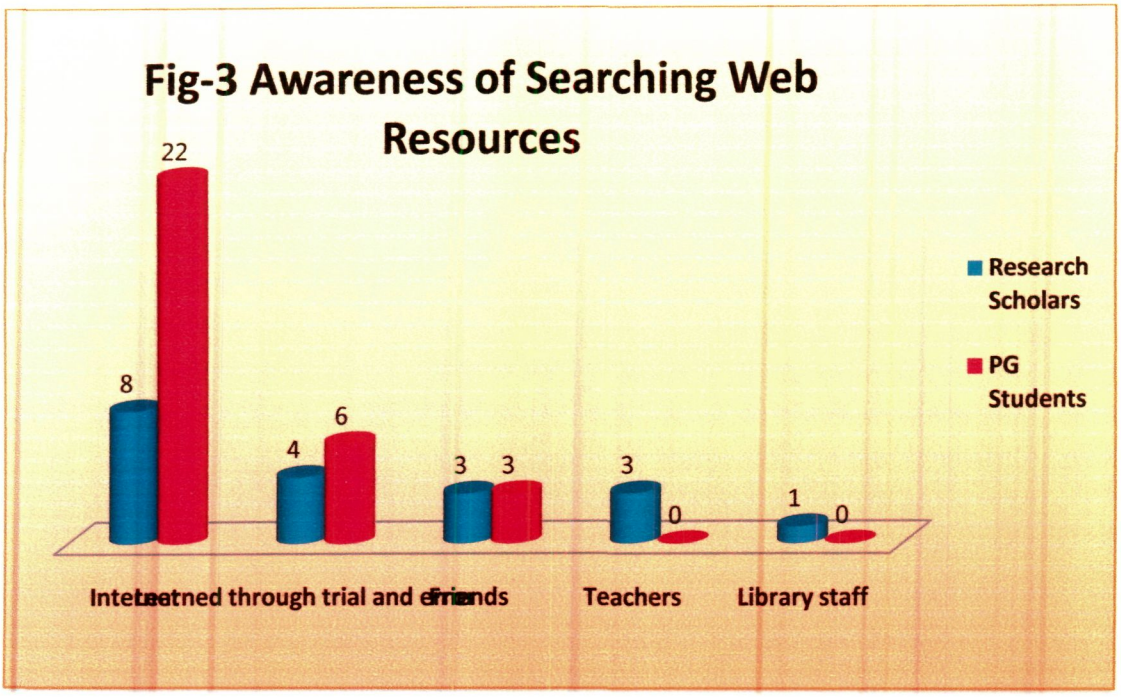
5.3 Awareness of Searching Web Resources

It is of great interest to recognize the agencies that are playing a key role in informing the users for searching and using the web resources. The investigator thus tried to know these agencies which are available for creating awareness among the users to efficiently searching the web resources and it was found that majority of the Research scholars (88.88%) know about web resources through internet, followed by trial and error method and least by friends, teachers and Library staff (table-3). Same was also revealed from PG students with majority of them also favouring the internet itself as the most widely used medium of awareness for searching the web resources and less by trial and error, friends, teachers and Library staff.

Table-3 Awareness of Searching Web Resources

Means	Research Scholars	PG Students
Internet	8 (88.88%)	22 (70.96%)
Learned through trial and error	4 (44.44%)	6 (19.35%)
Friends	3 (33.33%)	3 (9.67%)
Teachers	3 (33.33%)	0
Library staff	1 (11.11%)	0

(Multiple Answers Permitted)



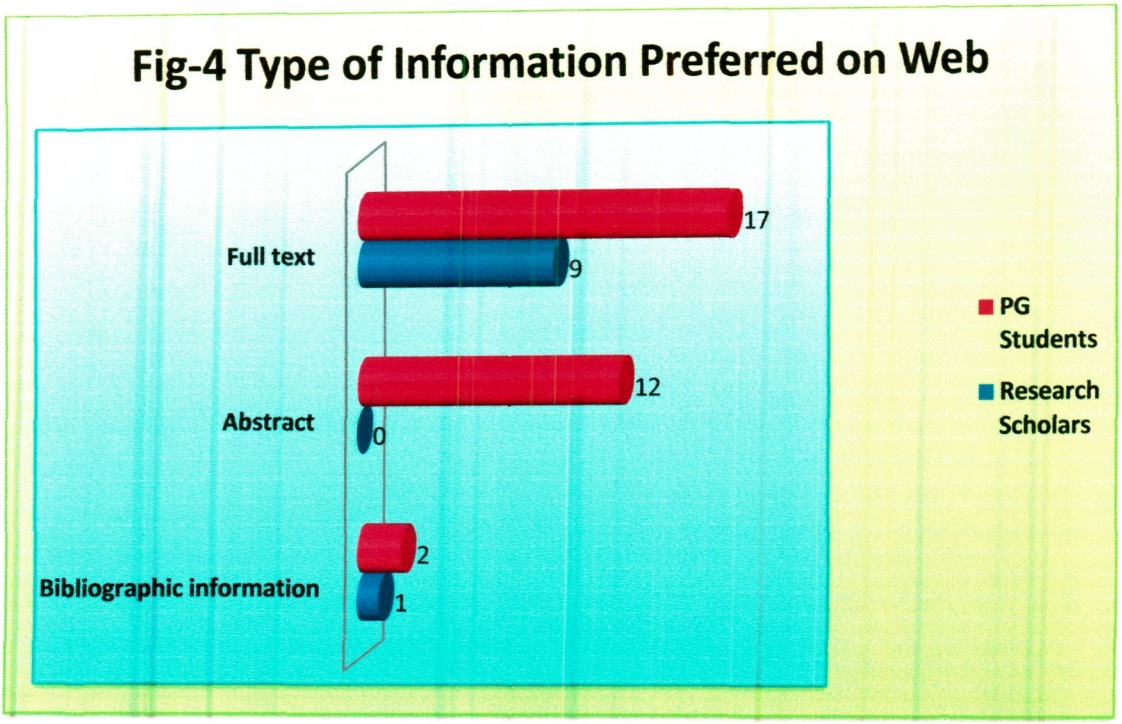
5.4 Type of Information Preferred on Web

Table-4 represents the type of information which is preferred by the users on web and it was found that both PG students and Research scholars prefer full text information on the web. The abstracts are proportionately being preferred by PG students than that of the Research scholars. Whereas, it was also found that the bibliographic information is being meagrely used by both types of users.

Table-4 Type of Information Preferred on Web

Information Type	Research Scholars	PG Students
Bibliographic Information	1 (11.11%)	2 (6.45%)
Abstract	0	12 (38.7%)
Full text	9 (100%)	17 (54.83%)

(Multiple Answers Permitted)

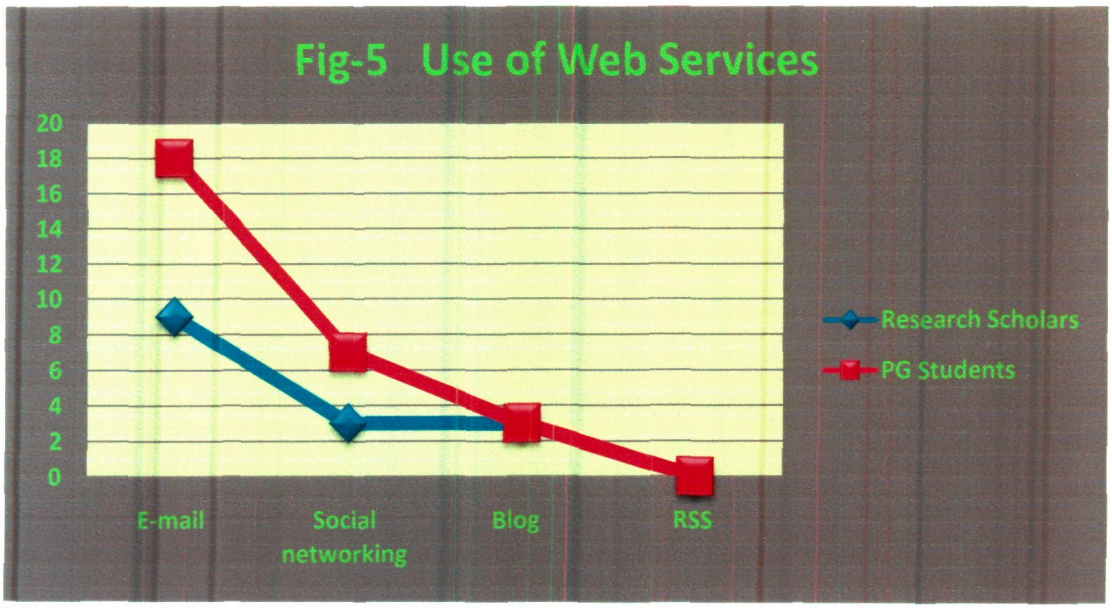


5.5 Use of Web Services

Here it is found in table-5 that all of the Research scholars and majority of the PG students (58%) use E-mail web service as the most preferred service on internet. While as the social networking is moderately being used by PG students and less by Research scholars. The least service which is preferred by both types of users is the blogging service on the web and RSS service is not being used at all by either of the Research scholars and PG students.

Table-5 Use of Web Services

Web Services	Research Scholars	PG Students
E-mail	9 (100%)	18 (58%)
Social networking	3 (33.33%)	7 (22.58%)
Blog	3 (33.33%)	3 (9.67%)
RSS	0	0



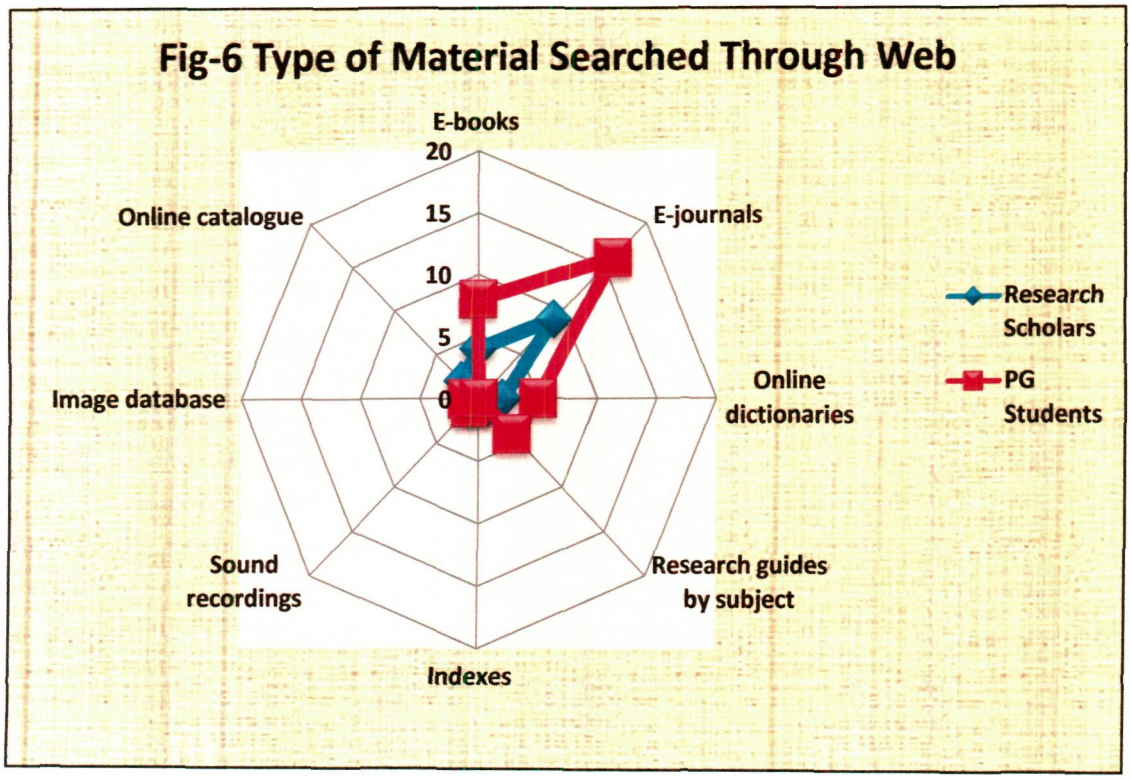
5.6 Type of Material Searched Through Web

The web is a source of wide variety of information and it depends on the searcher regarding the type of material he/she wants to search on web and the same type of query was investigated in the present study. It was found that majority of the PG students (51.61%) and all Research Scholars search E-journals, which is followed by e-books (44.44% Research scholars and 25.80% PG students) on the web as outlined in table-6. It is also revealed that online dictionaries are proportionately being searched by 16.12% PG students and 22.22% Research scholars, while as other material are very meagrely searched on web like sound recordings, image database, research guides by subject, etc.

Table-6 Type of Material Searched Through Web

Type of Material	Research Scholars	PG Students
E-books	4 (44.44%)	8 (25.80%)
E-journals	9 (100%)	16 (51.61%)
Online dictionaries	2 (22.22%)	5 (16.12%)
Research guides by subject	1 (11.11%)	4 (12.90%)
Indexes	0	0
Sound recordings	1 (11.11%)	1 (3.22%)
Image database	1 (11.11%)	1 (3.22%)
Online catalogue	2 (22.22%)	0

(Multiple Answers Permitted)



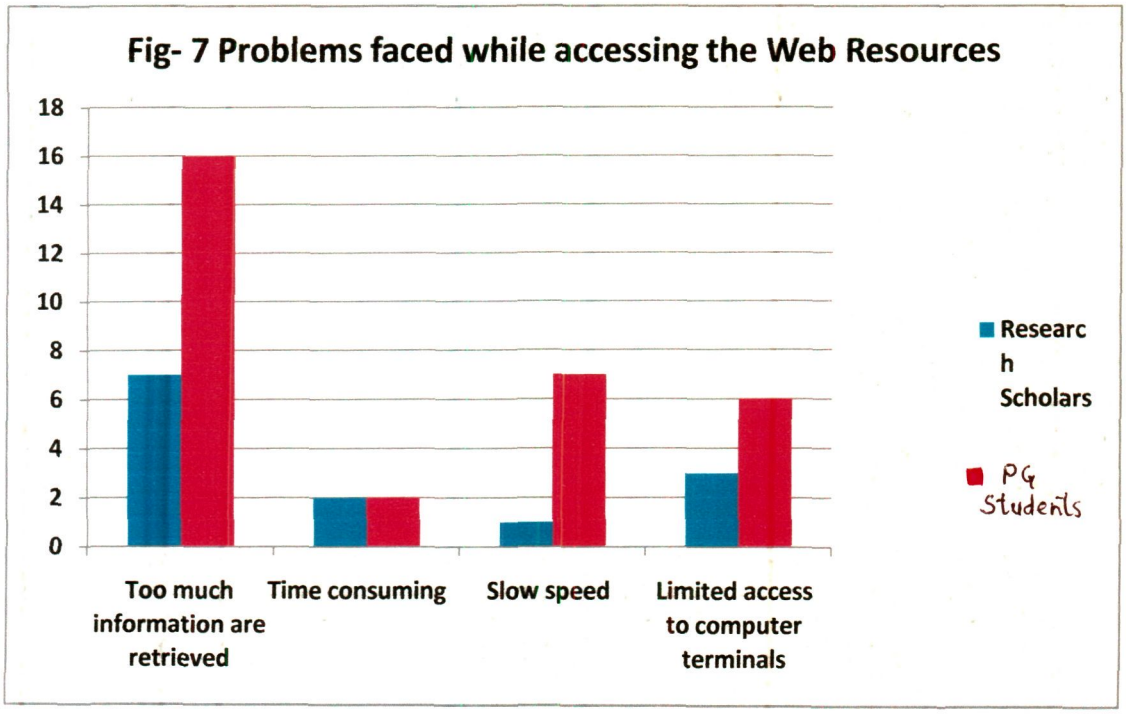
5.7 Problems faced while accessing the Web Resources

There are a number of obstacles while accessing the online resources and the problems which the respondents of the study face were to determined and it was indicated that majority of PG students and Research scholars face the problem of availability of too much information on web. The limited access to computer terminals is at the second level as a problem which is encountered by 33.33% Research scholars and 19.35% PG students while accessing the web. The problem of time consuming for accessing the web resources and the slow speed are the least cared hindrances for both types of users as shown in table-7.

Table-7 Problems faced while accessing the Web Resources

Problems	Research Scholars	PG Students
Too much information are retrieved	7 (77.77%)	16 (51.61%)
Time consuming	2 (22.22%)	2 (6.45%)
Slow speed	1 (11.11%)	7 (22.58%)
Limited access to computer terminals	3 (33.33%)	6 (19.35%)

(Multiple Answers Permitted)

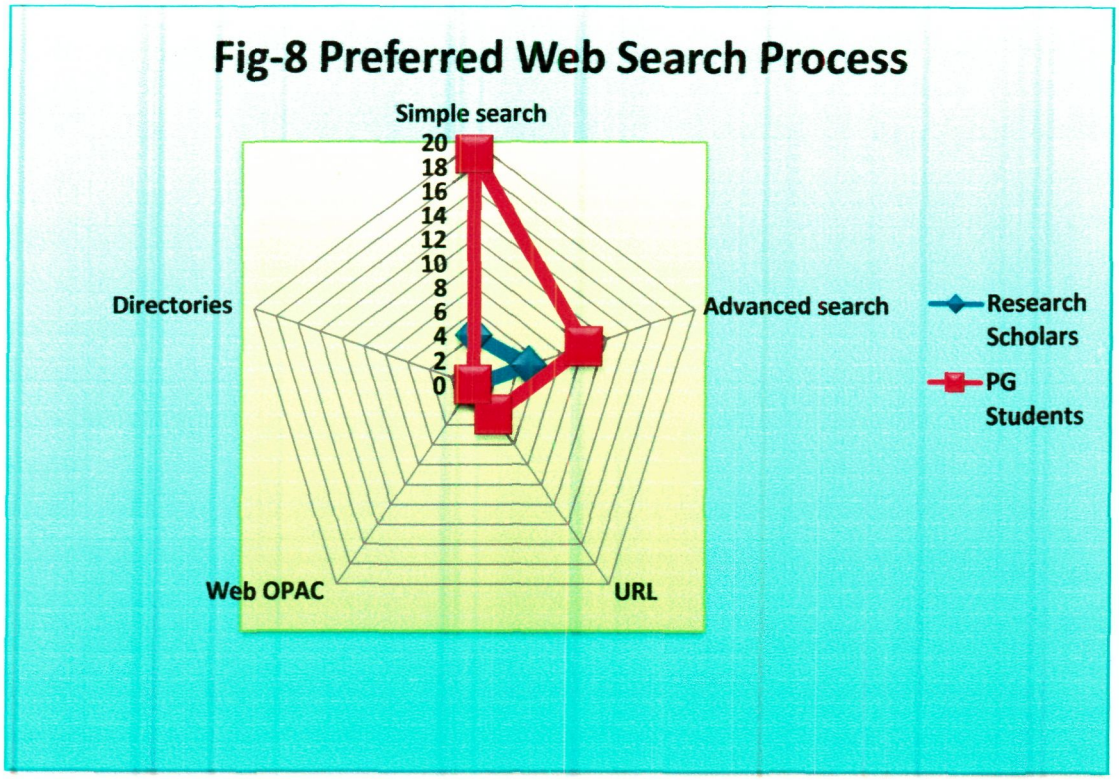


5. 8 Preferred Web Search Process

Here in this query, the investigator tried to find out the preferences of different web searching processes. It is clearly shown in the table-8 that 61.29% of the PG students and 44.44% of the Research scholars prefer simple search process and 32.25% of PG students and 55.55% of Research scholars responded that they prefer advanced searching process. The rest of the web searching processes (except 9.67% PG students for URL searching process) is not being used by either of the users.

Table-8 Preferred Web Search Process

Web search Process	Research Scholars	PG Students
Simple search	4 (44.44%)	19 (61.29%)
Advanced search	5 (55.55%)	10 (32.25%)
URL	0	3 (9.67%)
Web OPAC	0	0
Directories	0	0



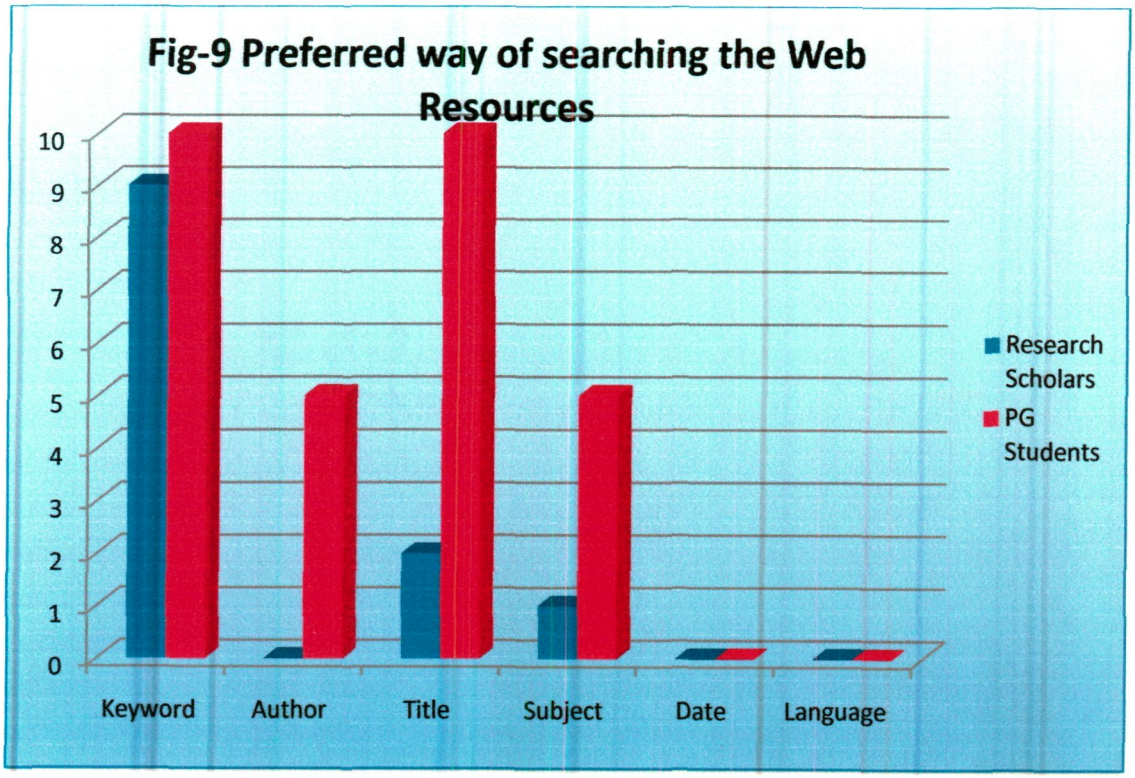
5.9 Preferred way of searching the Web Resources

It is clear from table-9 that majority of the Research scholars and 32.25% of PG students search the web resources by keyword, followed by 22.22% Research scholars and 32.25% PG students search web resources by the title. It was also found that the subject and author searching are moderately being used by both types of users and the date and language is not used at all.

Table-9 Preferred way of searching the Web Resources

Ways of Searching	Research Scholars	PG Students
By keyword	9 (100%)	10 (32.25%)
By author	0	5 (16.12%)
By title	2 (22.22%)	10 (32.25%)
By subject	1(11.11%)	5 (16.12%)
By date	0	0
By language	0	0

(Multiple Answers Permitted)



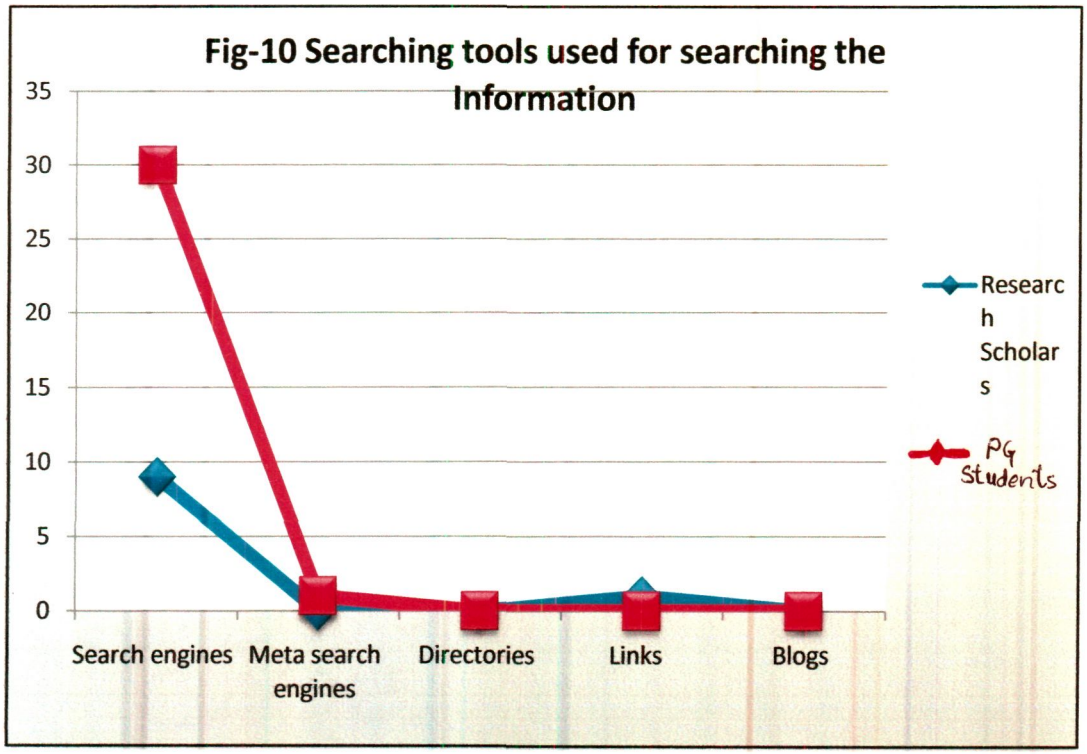
5. 10 Search tools used for searching the Information

The table-10 shows the searching tools being used by the users for searching the relevant information on the web and it was found that majority of PG students (96.77%) and Research scholars (100%) use search engines as the most widely useful search tool for accessing the content on the web. Whereas, the rest of the search tools are either very meagerly used or not at all by either of the users.

Table-10 Searching tools used for searching the Information

Search Tools	Research Scholars	PG Students
Search engines	9 (100%)	30 (96.77%)
Meta search engines	0	1 (3.22%)
Directories	0	0
Links	1 (11.11%)	0
Blogs	0	0

(Multiple Answers Permitted)

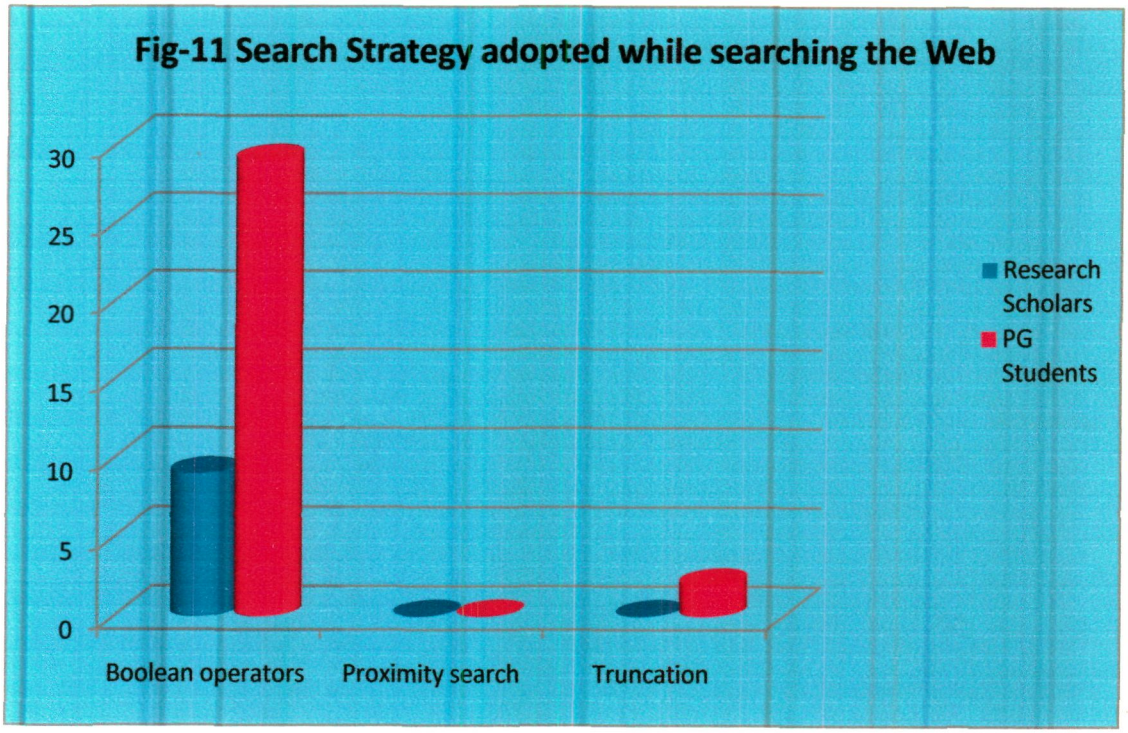


5.11 Search Strategy adopted while searching the Web

The table-11 outlines the searching strategy which is being adopted by the PG students and Research scholars to search the content on the web. It was revealed from the analysis that the Boolean operators is the searching strategy which is most widely used by the majority of the PG students (93.54%) and all of the Research scholars, whereas only 6.45% of the PG students and none of the Research scholars used truncation search strategy. The proximity search strategy is not being used by either of the users as can be depicted from the table below.

Table-11 Search Strategy adopted while searching the Web

Search Strategy	Research Scholars	PG Students
Boolean operators	9 (100%)	29 (93.54%)
Proximity search	0	0
Truncation	0	2 (6.45%)



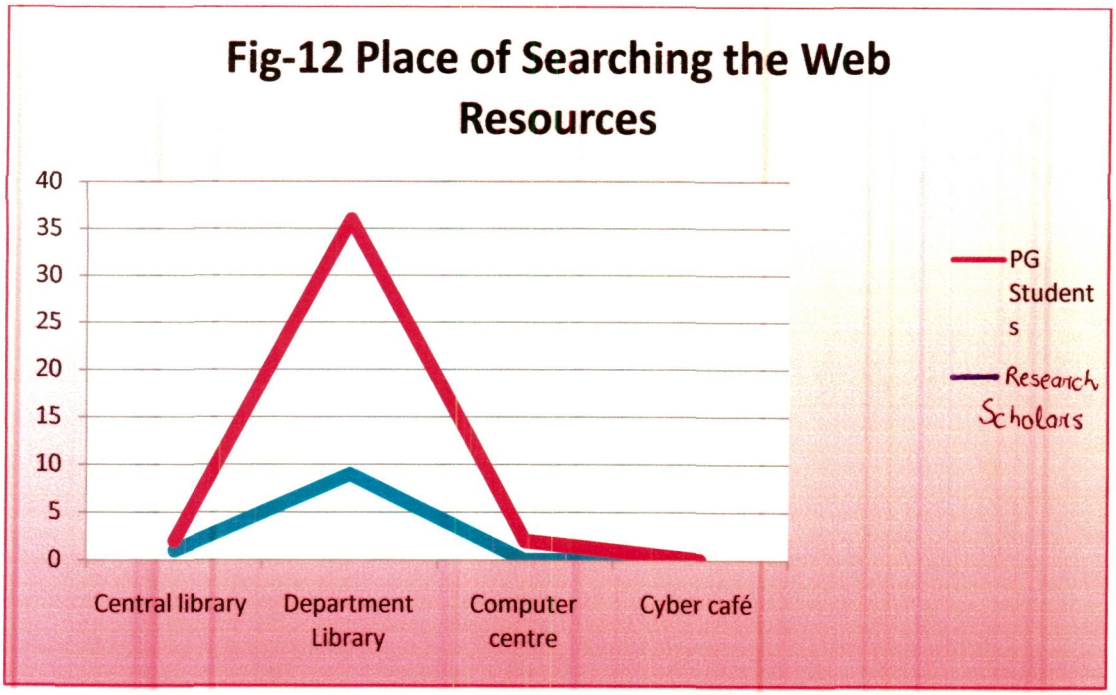
5.12 Place of Searching the Web Resources

The table-12 shows that the majority of PG students (27) and all of the Research scholars (9) search the web resources in the departmental library, followed by each one from both PG students and Research scholars who responded in favour of central library as a suitable place for accessing the web resources. Only by two PG students responded that they accessed the web resources in the computer centre.

Table-12 Place of Searching the Web Resources

Place	Research Scholars	PG Students
Central library	1 (11.11%)	1 (3.22%)
Department Library	9 (100%)	27 (87.09%)
Computer centre	0	2 (6.45%)
Cyber café	0	0

(Multiple Answers Permitted)

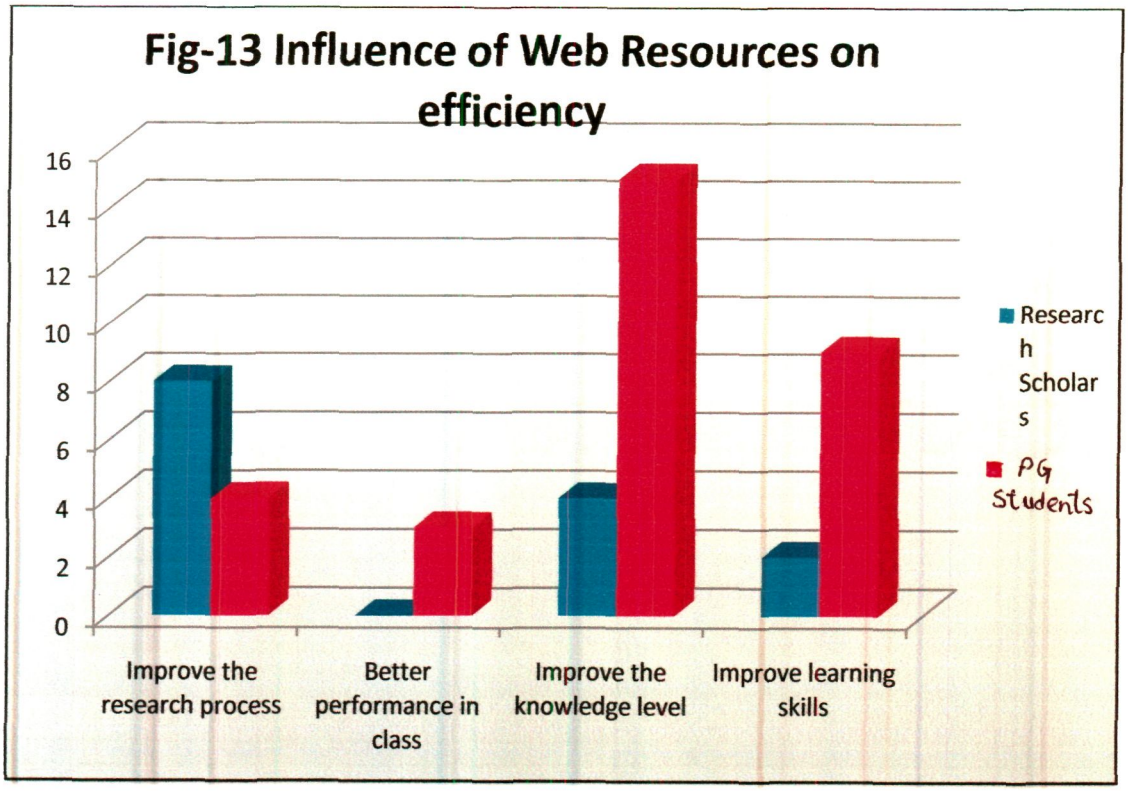


5.13 Influence of Web Resources on efficiency

It is revealed from the table-13 that 48.38% of PG students and 44.44% of Research scholars responded that web resources improved their level of knowledge. It was also found that 29.03% PG students and 22.22% Research scholars opined that the web resources improved learning skills. There were 88.88% Research scholars and 12.90% PG students who answered that the web resources improves the research process and 9.67% PG students and none of the Research scholars responded that they used web resources for thier better performance in the class.

Table-13 Influence of Web Resources on efficiency

Type of Influence	Research Scholars	PG Students
Improve the research process	8 (88.88%)	4 (12.90%)
Better performance in class	0	3(9.67%)
Improve the knowledge level	4 (44.44%)	15 (48.38%)
Improve learning skills	2 (22.22%)	9 (29.03%)

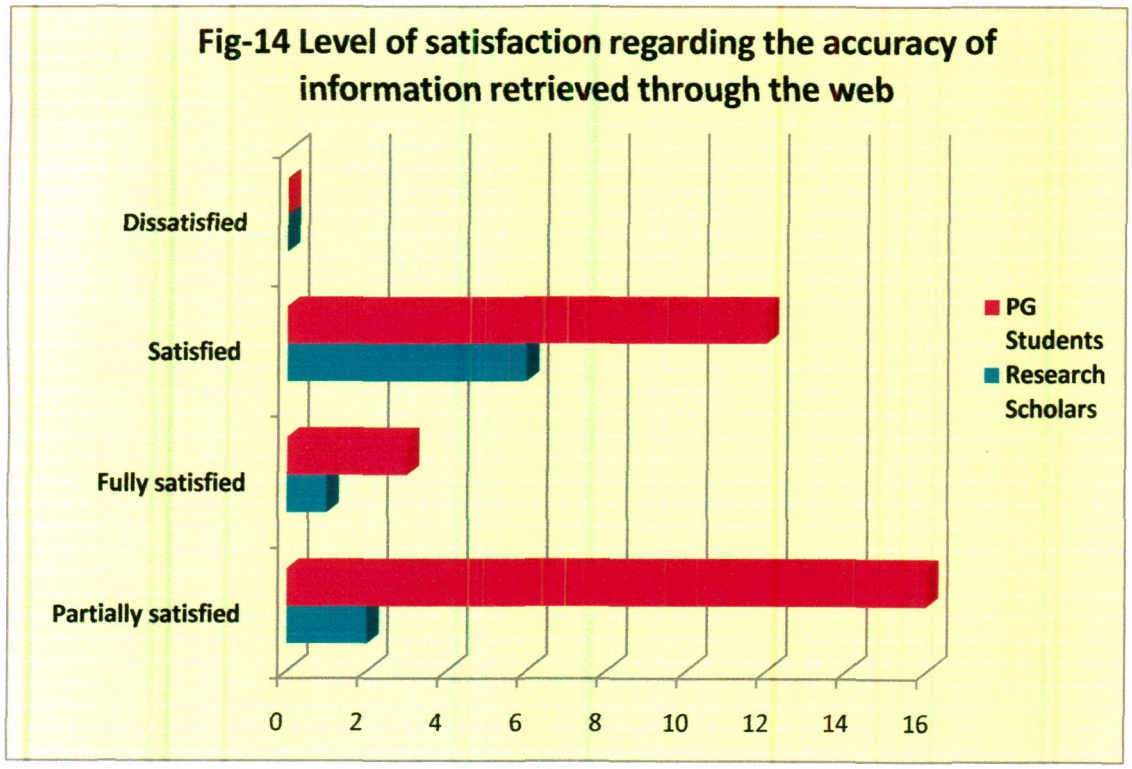


5.14 Level of satisfaction regarding the accuracy of information retrieved through the web

It is depicted from table-14 that 51.61% of PG students and 22.22% of Research scholars responded that they are partially satisfied regarding the accuracy of information retrieval through the web and 38.70% of PG students and 66.66% of Research scholars are satisfied with the information present on the web. It is only 9.67% of PG students and 11.11% of Research scholars were fully satisfied with the content on the web.

Table-14 Level of satisfaction regarding the accuracy of information retrieved through the web

Satisfaction Level	Research Scholars	PG Students
Partially satisfied	2 (22.22%)	16 (51.61%)
Fully satisfied	1 (11.11%)	3 (9.67%)
Satisfied	6 (66.66%)	12 (38.70%)
Dissatisfied	0	0

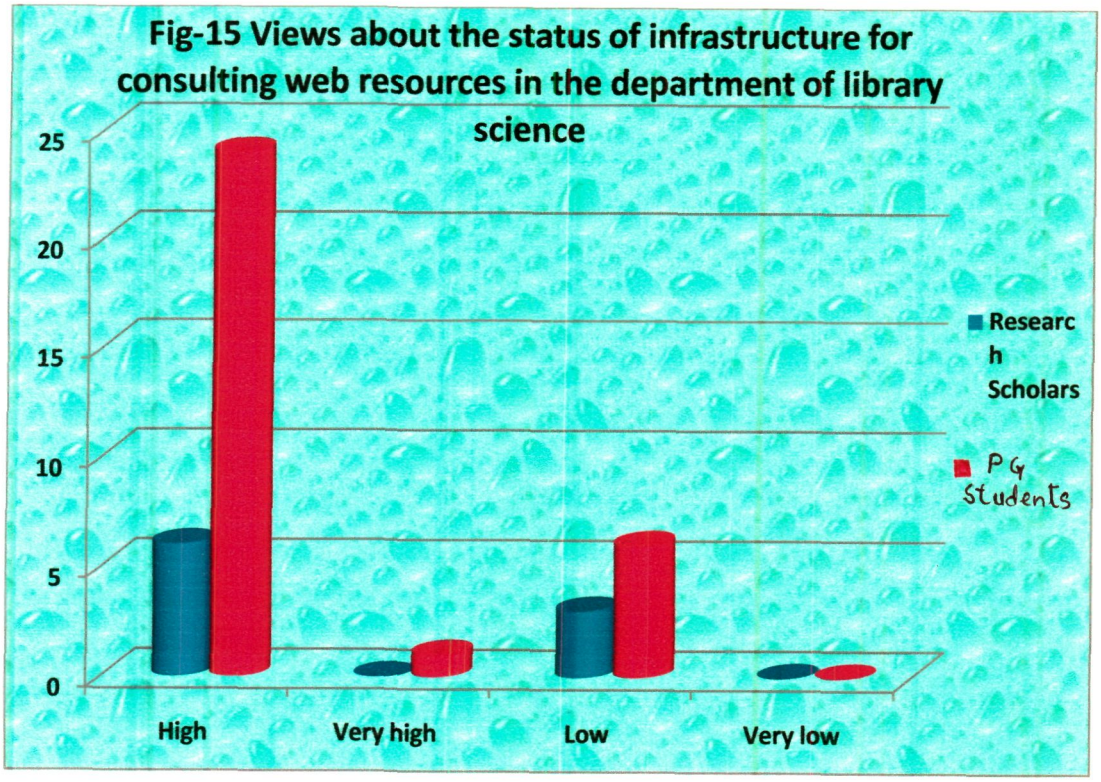


5.15 Views about the status of infrastructure for consulting web resources in the department of library science

The table-15 indicates that majority of PG students (77.41%) and Research scholars (66.66%) responded that the status of infrastructure for consulting web resources in the department of library science is high. Also, it was found that 19.35% of PG students and 33.33% of Research scholars answered that it is low and only 3.22% of PG students and none of the Research scholars opined very high about the status of infrastructure for consulting web resources in department of library science.

Table-15 Views about the status of infrastructure for consulting web resources in the department of library science

Views	Research Scholars	PG Students
High	6 (66.66%)	24 (77.41%)
Very high	0	1 (3.22%)
Low	3 (33.33%)	6 (19.35%)
Very low	0	0



5. 16 Requirements of the Training

The table-16 shows that 48.38% of PG students and none of the Research scholars responded that the instruction through special classes is the requirement for undergoing training. It was also revealed that 41.93% of PG students and 55.55% of the Research scholars answered the requirements of training programmes and there were 35.48% of PG students and 44.44% of Research scholars who replied that guidance in the computer lab is required for effective usage of the online resources and only a few number of users demanded that the role of teachers was neededto train the users for searching the content on the web.

Table-16 Requirements of the Training

Requirements	Research Scholars	PG Students
Training programmes	5 (55.55%)	13 (41.93%)
Guidance in the computer lab	4 (44.44%)	11 (35.48%)
Teachers	1 (11.11%)	1 (3.22%)
Instructions through special classes	0	15 (48.38%)

(Multiple Answers Permitted)

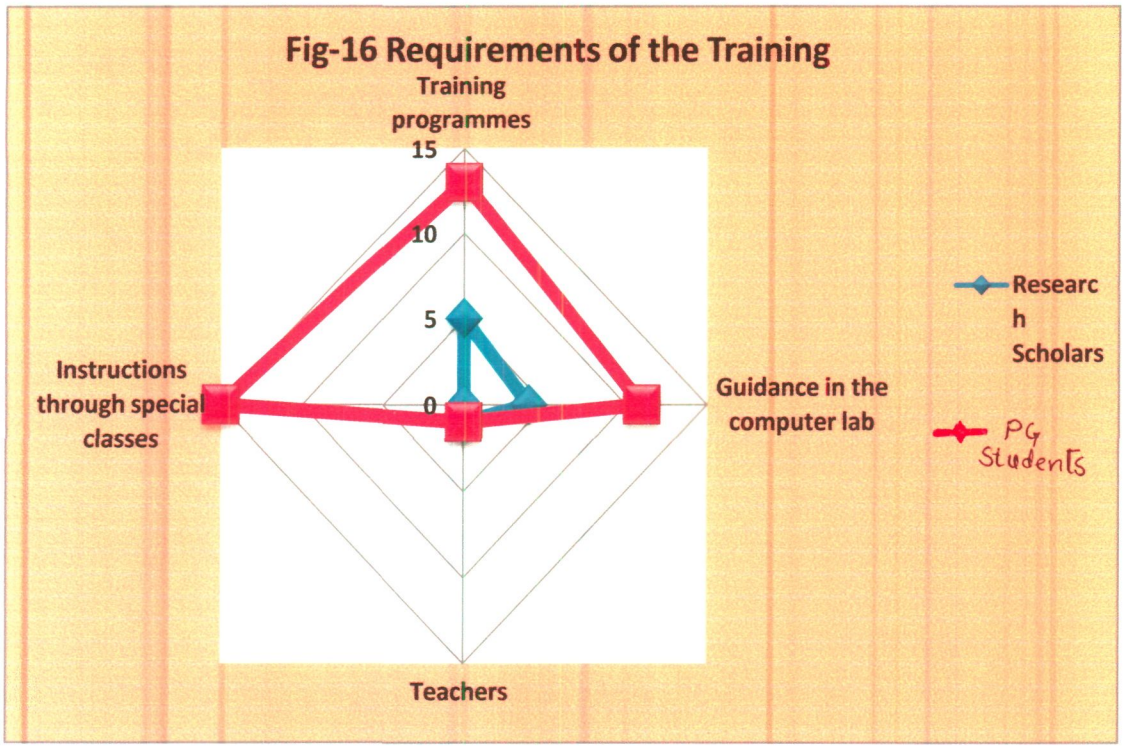


Fig-16 Requirements of the Training
Training programmes
15
10
5
0
Instructions through special classes
Guidance in the computer lab
Teachers
Research Scholars
PG Students

Chapter-6

Findings and Conclusion

CHAPTER 6

Findings and Conclusions

Findings

1. It was found in the study that, all Research Scholars use web resource every day while a majority of PG students use web resources everyday.
2. It is observe from the study that majority of the Research Scholars use web resources for the purpose of study and research, while the PG students use web resources for finding quick information.
3. It is found that, the majority of the respondents (PG students and Research Scholars) are acquainted with the internet.
4. It is found from the survey, that the majority of Research Scholars as well as the PG students prefer full text information.
5. The analysis shows that e-mail service has been used as web services by the Research Scholars and PG students.
6. It is clearly shown in the survey, that the majority of the respondents used e-journals.
7. The result shows, that majority of Research Scholars as well as the PG students face problems while accessing web resources as too much information is retrieve.
8. The study found that, the majority of Research Scholars preferred using advance search process whereas as the majority of the PG students preferably used the simple search process.
9. Analysis shows that, most of the Research Scholars search the web resources by keywords while most of the PG students search the web resources using keywords as well as title also.

10. Majority of the Research Scholars and PG students use search engines as the tool for searching information and all the research scholars and majority of the PG students adopted Boolean operators as a search strategy.
11. Analysis shows that, the majority of respondents i.e. Research Scholars and PG students search web resources in the Department of Library.
12. The result clearly shows, that majority of Research Scholars are satisfied with the accuracy of information between them but majority of PG students are partially satisfied with the use of web resources.
13. In the study it is found, the views of the Research Scholars and PG students are satisfied status of infrastructure of the Library Science Department.
14. Majority of the Research Scholars stated that use of web resources improve their research process that in turn influence their ways of conducting research but the PG students answered that the use of web resources were helpful in improving their knowledge level.
15. The majority of Research Scholars, PG students feel training require for enhancement of using web resources in the form of training programme, conducted by the Libraries/Departments.

Tenability Hypothesis

Hypothesis # 1

Most of the Research Scholars and PG students prefer the usage of web resources

- It is clearly proved from table 1 that majority of the users are using the web resources every day so hypothesis is proved truth.

Hypothesis # 2

Both use online journals heavily

- In the table 6, the study reveals that both research scholars and PG student's mostly use online journals. Thus the hypothesis is positive.

Hypothesis # 3

Most of the Research Scholars and PG students are satisfied with the use of web resources.

It is evident from the results of that most of the Research Scholars are satisfied with using the web resources but the majority of the PG students are partially satisfied with using the web resources. Thus, Hypothesis is partially substantiated.

Conclusions: The study sought to examine the web searching behavior among the PG students and research scholars of the department of library and information science, AMU, Aligarh. The students are grouped into 2 categories (i) Research Scholars (ii) PG students. The study proved that 100% of the students are aware of web resources and make use of them.

They use newermeans of technology for retrieving quick information. The web resources available on the internet are used by users generally in the department library. Web contains a wide hange of information and provides links to other resources. For searching web resources generally links through search engines are preferred over others.

Web searching have become important part of human life. Mostly students search web resources for the purpose of study and research and for finding quick information. It has rapidly changed the way of seeking information for i.e. quick information keywords is quite popular among the PG students and research scholars and the type of information generally preferred is full text and the type of material they preferred. Is e-journals. The users mostly use e-mail service. Sometimes the users also face the problem while accessing the web resources as

two much information is retrieved. The study helps to improve the web searching among the PG students and Research Scholars.

Now-a-days information is playing a vital role in human life. Most of the users search information through web that is why web resources are very important in today's world. In today's time most of the teachers and students are making use of web resources. Therefore, web searching becomes an important area in their lives.

Similarly, web searching behavior is also an important area because through this we get to know what are the methods/techniques that are being adopted by the users while searching or accessing resources through the web.

Suggestions

1. Necessary training facilities to be provided to the students to make effective use of the web resources.
2. Developing and printing facilities should be extended to students.
3. More e-resources should be added to the present available collection.
4. Orientation programmes should be provided in the department regularly so the users may be aware about its services.

Recommendations for future research

1. Study on web searching behavior of RS & PG students of different facilities such as medical science, Arts, Agriculture Science, Engineering etc. can be done in order to better understand the searching habits of users.
2. Moreover comparative studies of web search behavior in different universities such as DU, JNU, AMU, etc can be conducted.
3. Requirement of training for web searching in different areas can be done
4. To study attitude toward web searching.

Appendices:

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Questionnaire

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QUESTIONNAIRE

Dear friend,

I am conducting a survey on the topic **"WEB SEARCHING BEHAIVIOUR AMONG THE PG STUDENTS AND RESEARCH SCHOLARS OF THE DEPT. OF LIBRARY AND INFORMATION SCIENCE, AMU, ALIGARH",** as part of M.L.I.Sc. course.

I would like to request you to fill up this questionnaire and give your valuable suggestions in the space provided. The information will be used for dissertation work only.

I will be highly thankful to you for this act of kindness.

Yours Sincerely

Sania Arif

Personal Information:

Name:

Gender: Male [ ]

Female [ ]

Faculty:

Department:

Status :Research scholar [ ]

PG student [ ]

Q1. How often do you use web resources?

a. Everyday [ ]

b. 2-3 hrs a week [ ]

c. Weekly [ ]

d. Monthly [ ]

e. Occasionally [ ]

Q2. For what purpose do you use web resources? (Multiple answers permitted)

a. For study and Research [ ]

b. For updating knowledge [ ]

c. Carrier development [ ]

d. Finding quick information [ ]

Q3. How did you get acquaintance with searching the web resources?
(Multiple answers permitted)

a. Internet [ ]

b. Learned through in trial and error [ ]

c. Friends [ ]

d. Teachers [ ]

e. Library staff [ ]

Q4. What mode of information do you generally prefer on web?
(Multiple answers permitted)

a. Bibliographic information [ ]

b. Abstract [ ]

c. Full text [ ]

Q5. Preferred use of web services?

a. E-mail [ ]

b. Social networking [ ]

c. Blog [ ]

d. RSS [ ]

Q6. What type of material do you search through the web?

(Multiple answers permitted)

a. E-books [ ]

b. E-journals [ ]

c. Online dictionaries [ ]

d. Research guides by subject [ ]

e. Indexes [ ]

f. Sound recordings [ ]

g. Image database [ ]

h. Online catalogue [ ]

Q7. What type of problems are faced while accessing the web resources?

(Multiple answers permitted)

a. Too much information are retrieved [ ]

b. Time consuming [ ]

c. Slow speed [ ]

d. Limited access to computer terminals [ ]

Q8. Which web search process do you use preferably?

a. Simple search [ ]

b. Advanced search [ ]

c. URL [ ]

d. Web OPAC [ ]

e. Directories [ ]

Q9. What is your preferred way for searching the web resources?
(Multiple answers permitted)

a. By keyword [ ]

b. By author [ ]

c. By title [ ]

d. By subject [ ]

e. By date [ ]

f. By language [ ]

Q10. Which search tools do you use while searching for information?
(Multiple answers permitted)

a. Search engines [ ]

b. Meta search engines [ ]

c. Directories [ ]

d. Links [ ]

f. Blogs [ ]

Q11. What search strategy do you adopt while searching the web?

a. Boolean operators [ ]

b. Proximity search [ ]

c. Truncation [ ]

Q12. Place where you search for web resources most?
(Multiple answers permitted)

a. Central library [ ]

b. Department Library [ ]

c. Computer centre [ ]

d. Cyber café [ ]

Q13. How does web resources influence your efficiency?

a. Improve the research process [ ]

b. Better performance in class [ ]

c. Improve the knowledge level [ ]

d. Improve learning skills [ ]

Q14. Please state the level of satisfaction regarding the accuracy of information retrieved through the web?

A. Partially satisfied [ ]

b. Fully satisfied [ ]

c. Satisfied [ ]

d. Dissatisfied [ ]

Q15. Your views about the status of infrastructure for consulting web resources in the dept of library science?

a. High [ ]

b. Very high [ ]

c. Low [ ]

d. Very low [ ]

Q16. Do you feel training is required for development of using the web resources in the form of: (Multiple answers permitted)

a. Training programmes [ ]

b. Guidance in the computer lab [ ]

c. Teachers [ ]

d. Instructions through special classes [ ]

Thanks